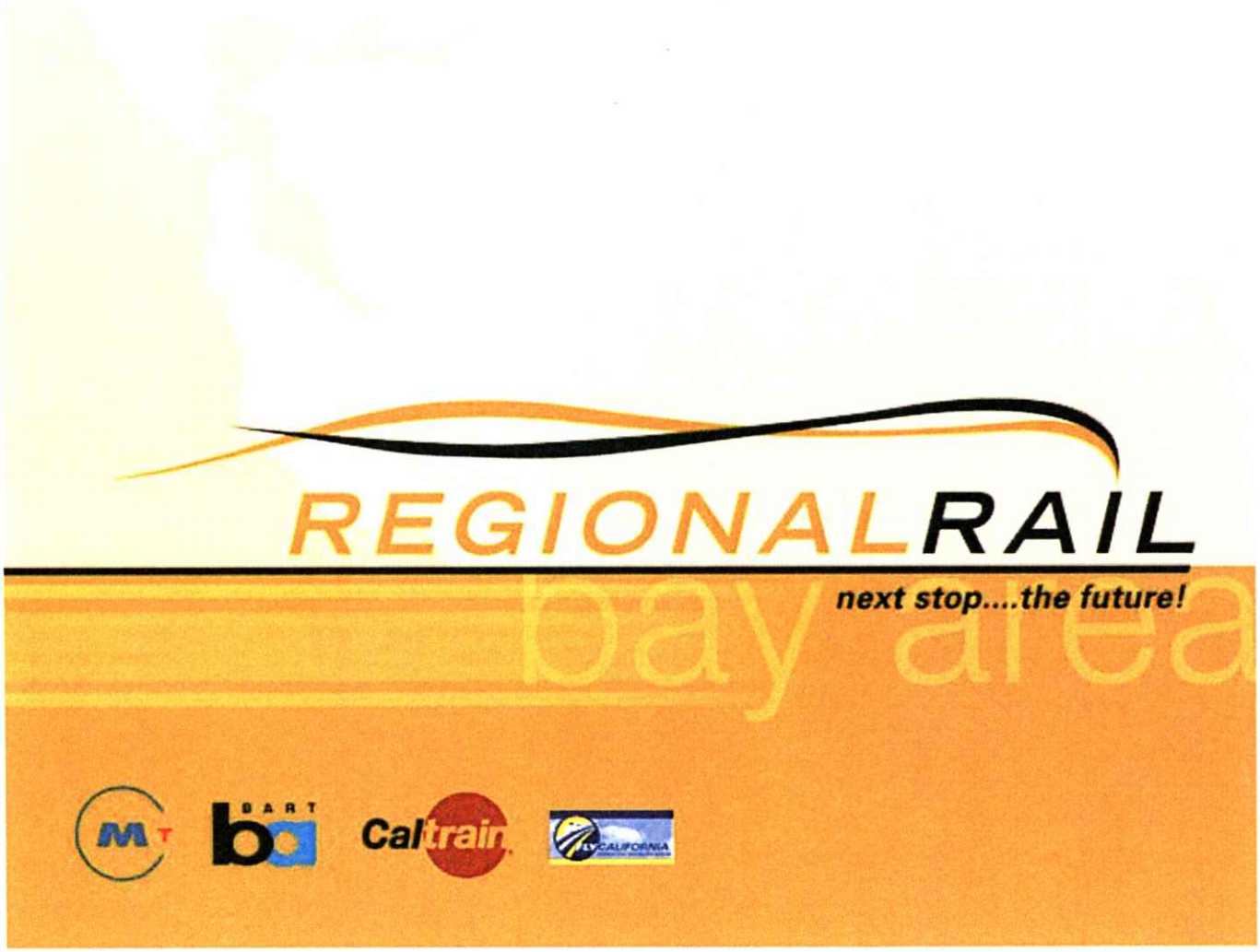
BAY AREA REGIONAL RAIL PLAN

Technical Memorandum 4j
Principal Stations/Terminals and Connectivity Plan



January 31, 2007

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Index

Connectivity Points - Introduction

Principal Stations and Terminals

Connectivity points are important to the mobility capability of the passenger and are proven to increase patronage for the overall rail network. The Bay Area is currently severely lacking in these connectivity opportunities.

The Regional Rail Plan proposes several locations for connectivity among the rail networks and the local transportation systems. The connectivity points provide passenger connections between two or more rail services making it easier for the passenger to reach their destination. Passenger connections are preferably "cross platform" for direct rail to rail connections or at a minimum a common concourse connection. Schedule coordination is key to these connectivity points. Trains that need to transfer passengers need to meet at the stations to minimize the transfer time. Once a network is defined and an operations plan is developed the function of each connectivity station can be more clearly defined.

Schedule coordination in general is by hierarchy of trains; the fastest and most express train arrives last at a connectivity Station and is the first to leave. The slowest and most local train arrives first and waits for the all the faster trains that it is scheduled to meet with. The same would work for the local transportation system; LRT, busses, shuttles and vans. They would arrive early enough to transfer their passengers to the higher speed system and wait for the arriving passengers from these higher speed systems to continue to their local destination. This is the general philosophy of the European systems and it seems to work well.

Major Connectivity Stations and their potential services have been identified for each of the major corridors. There are tentatively organized in three groups, depending on their impact and importance in terms of populations served and operators present. They are listed below and shown on the enclosed maps.

State wide relevance

1. Sacramento* – AMTRAK, CaHSR, Regional Rail, SACRT
   The design of the Sacramento station is not part of this study, but studies done by others will be integrated in the Regional Rail Plan.
2. San Francisco 4th and Townsend – CaHSR, Regional Rail, BART, Muni (Surface and Central Subway)
3. San Francisco Transbay Terminal *– CaHSR, Regional Rail, BART *The design of the Transbay Terminal is not part of this study, but studies done by others will be integrated in the Regional Rail Plan.*
4. San Jose Diridon Station – AMTRAK, CaHSR, Regional Rail, BART, VTA LRT
5. Tracy – CaHSR (transfer Station LA/SF to SAC/SJ and vice versa), Regional Rail, e-BART.
6. West Oakland – AMTRAK, CaHSR, Regional Rail, BART

Regional relevance

7. Livermore / Livermore West (Isabel) - CaHSR, Regional Rail, BART
8. Oakland Airport / Coliseum * - CaHSR, Regional Rail , BART
9. Richmond –Regional Rail (with connection to Marin), BART.
10. Stockton – CaHSR, Regional Rail

Local relevance

11. Modesto - CaHSR, Regional Rail

12. Union City – BART, CaHSR, Regional Rail (Capital Corridor, Dumbarton)
13. Warm Springs - CaHSR, Regional Rail, BART
14. Redwood City * - CaHSR, Regional Rail
15. Napa Junction – Regional Rail
16. Pajaro – Regional Rail, transfer Station between San Jose/Salinas to Santa Cruz/Monterrey service

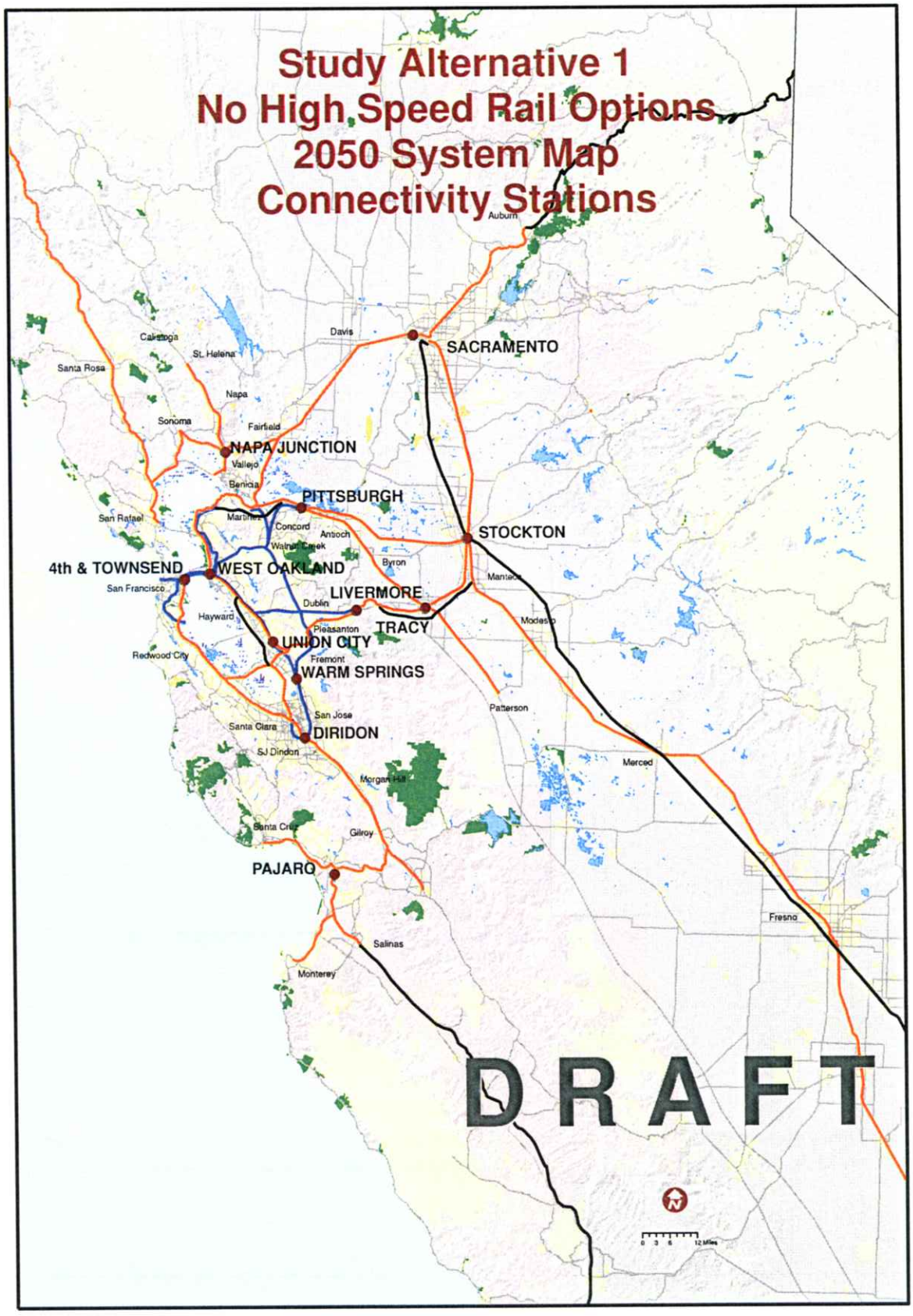
(Stations marked * are not described in graphic details in this memo)

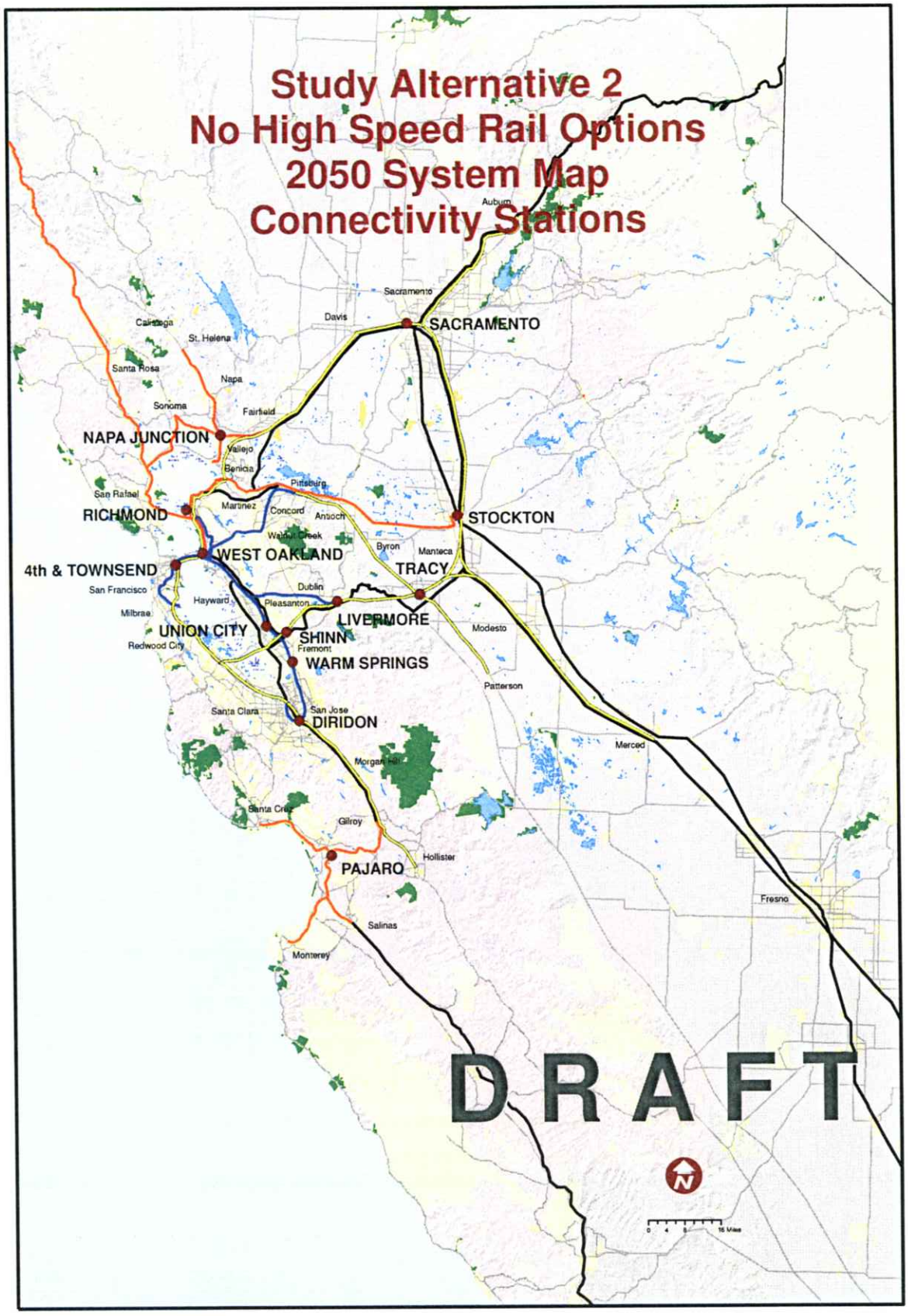
The local service connections, bus, light rail, taxi and shuttles, are discussed as part of Technical Memorandum 4l.

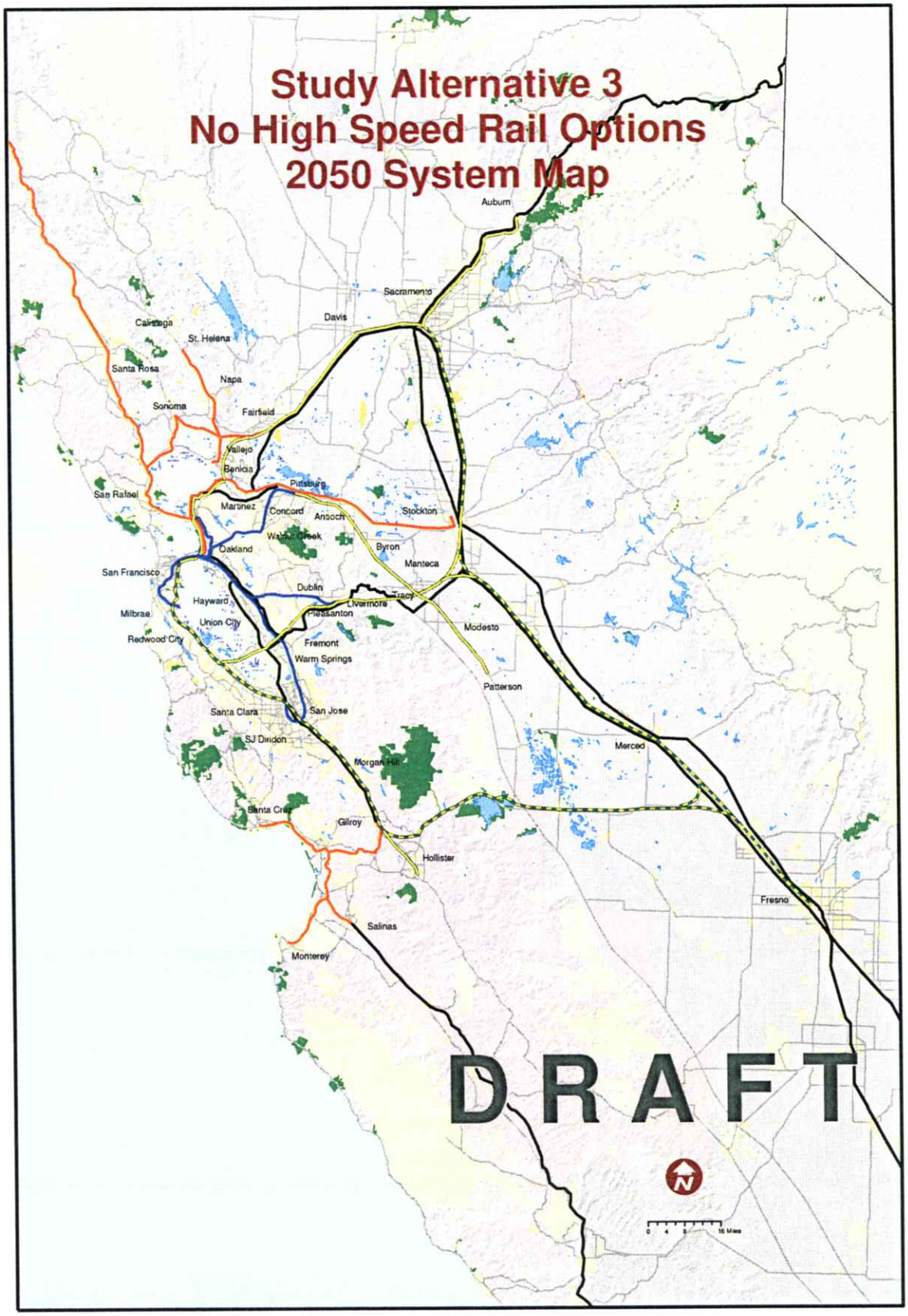
Regional rail alternatives 1 and 2 (without High Speed Rail) have similar opportunities at these connectivity points; see attached graphics. Alternative 1 is applicable for the use of standard passenger rail equipment and Alternative 2 is for the use of light weight equipment in coordination with the High Speed Rail Equipment. The exact track connections and platform locations will vary depending on the types of vehicles being operated. The issue of standard versus light weight vehicles will dictate the track configuration and the station operation. The two types of vehicles must be operated on separate tracks or kept apart with temporal separation.

The Bay area crossing map shows the potential connection between San Francisco and Oakland for all three types of rail connections; High Speed Rail, Regional Rail and BART. There is a potential for a layover yard for high-speed rail and lightweight regional rail adjacent to I-880 in West Oakland.

See also Technical Memorandum 4a for "Conditions, Configuration & Traffic on Existing System". This memo provides more detail on the amount of freight traffic and its impact on the passenger station.

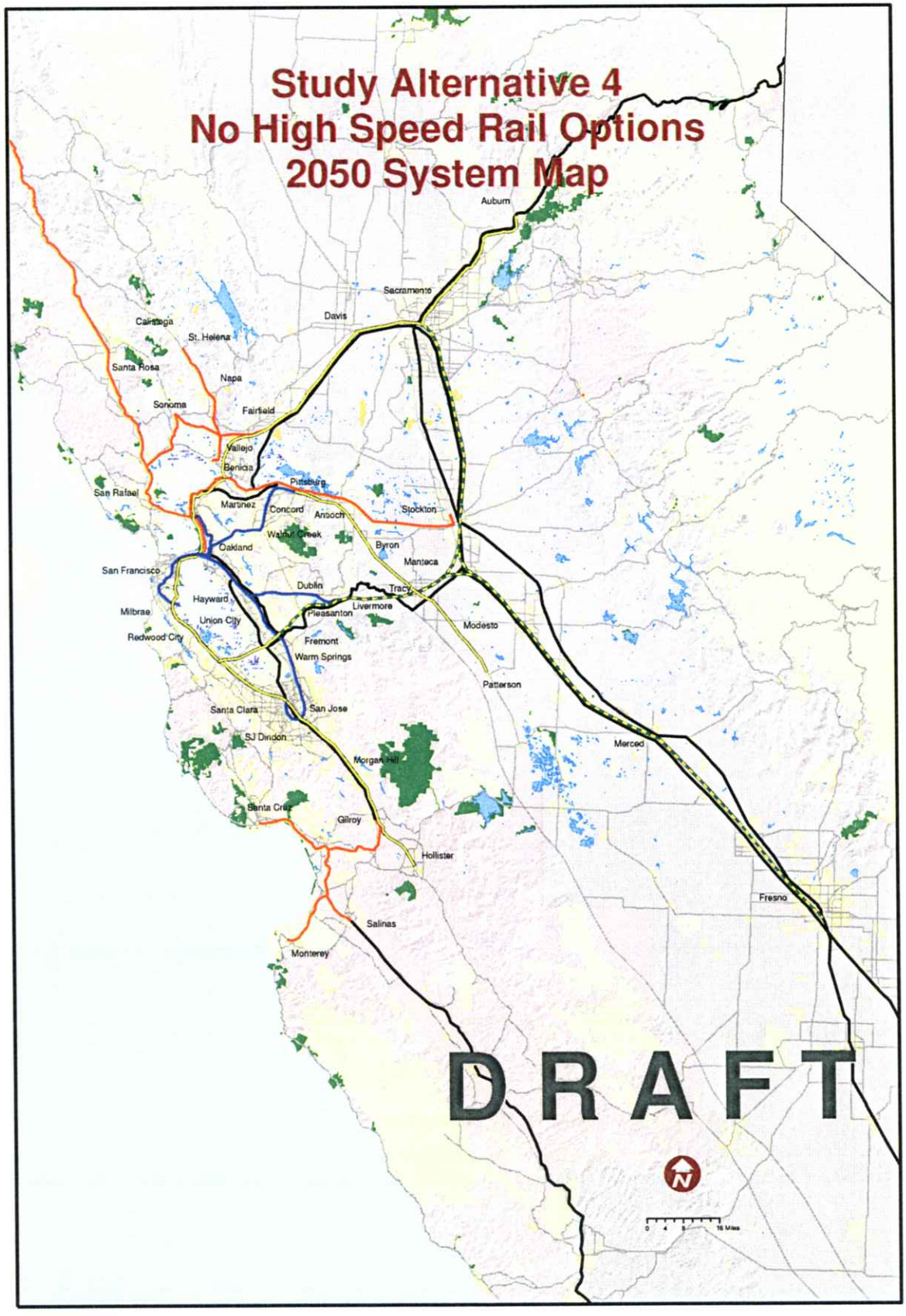

Study Alternative 1
No High Speed Rail Options
2050 System Map
Connectivity Stations
Auburn
Davis
SACRAMENTO
Calistoga
St. Helena
Santa Rosa
Napa
Sonoma
Fairfield
NAPA JUNCTION
Vallejo
Benicia
PITTSBURGH
San Rafael
Martinez
Concord
Antioch
Walnut Creek
STOCKTON
Byron
4th & TOWNSEND
WEST OAKLAND
San Francisco
Manteca
LIVERMORE
Dublin
Hayward
Pleasanton
TRACY
Modesto
UNION CITY
Redwood City
Fremont
WARM SPRINGS
Patterson
San Jose
Santa Clara
DIRIDON
SJ Diridon
Merced
Morgan Hill
Santa Cruz
Gilroy
PAJARO
Fresno
Salinas
Monterey
DRAFT
0 3 6 12 Miles
Legend
HSR only, light weight equipment, double track, fully grade separated
Regional Passenger Rail, light weight, fully grade separated
HSR with Regional Passenger Rail
Freight/Regional Rail
Predominantly freight, standard equipment
BART
Federal Lands
Park Areas
Conservation Areas


Study Alternative 2
No High Speed Rail Options
2050 System Map
Connectivity Stations
Auburn
Sacramento
Davis
SACRAMENTO
Calistoga
St. Helena
Santa Rosa
Napa
Sonoma
Fairfield
NAPA JUNCTION
Vallejo
Benicia
Pittsburg
San Rafael
Martinez
Concord
Antioch
RICHMOND
STOCKTON
Walnut Creek
Byron
Manteca
WEST OAKLAND
4th & TOWNSEND
TRACY
San Francisco
Dublin
Hayward
Pleasanton
Milbrae
LIVERMORE
Modesto
UNION CITY
SHINN
Redwood City
Fremont
WARM SPRINGS
Patterson
Santa Clara
San Jose
DIRIDON
Merced
Morgan Hill
Santa Cruz
Gilroy
Hollister
PAJARO
Fresno
Salinas
Monterey
DRAFT
N
0 4 8 15 Miles
Legend
HSR only, light weight equipment, double track, fully grade separated
Regional Passenger Rail, light weight, fully grade separated
HSR with Regional Passenger Rail
Freight/Regional Rail
Predominantly freight, standard equipment
BART
Federal Lands
Park Areas
Conservation Areas



Legend

- HSR only, light weight equipment, double track, fully grade separated
- Regional Passenger Rail, light weight, fully grade separated
- HSR with Regional Passenger Rail
- Freight/Regional Rail
- Predominantly freight, standard equipment
- BART
- Federal Lands
- Park Areas
- Conservation Areas



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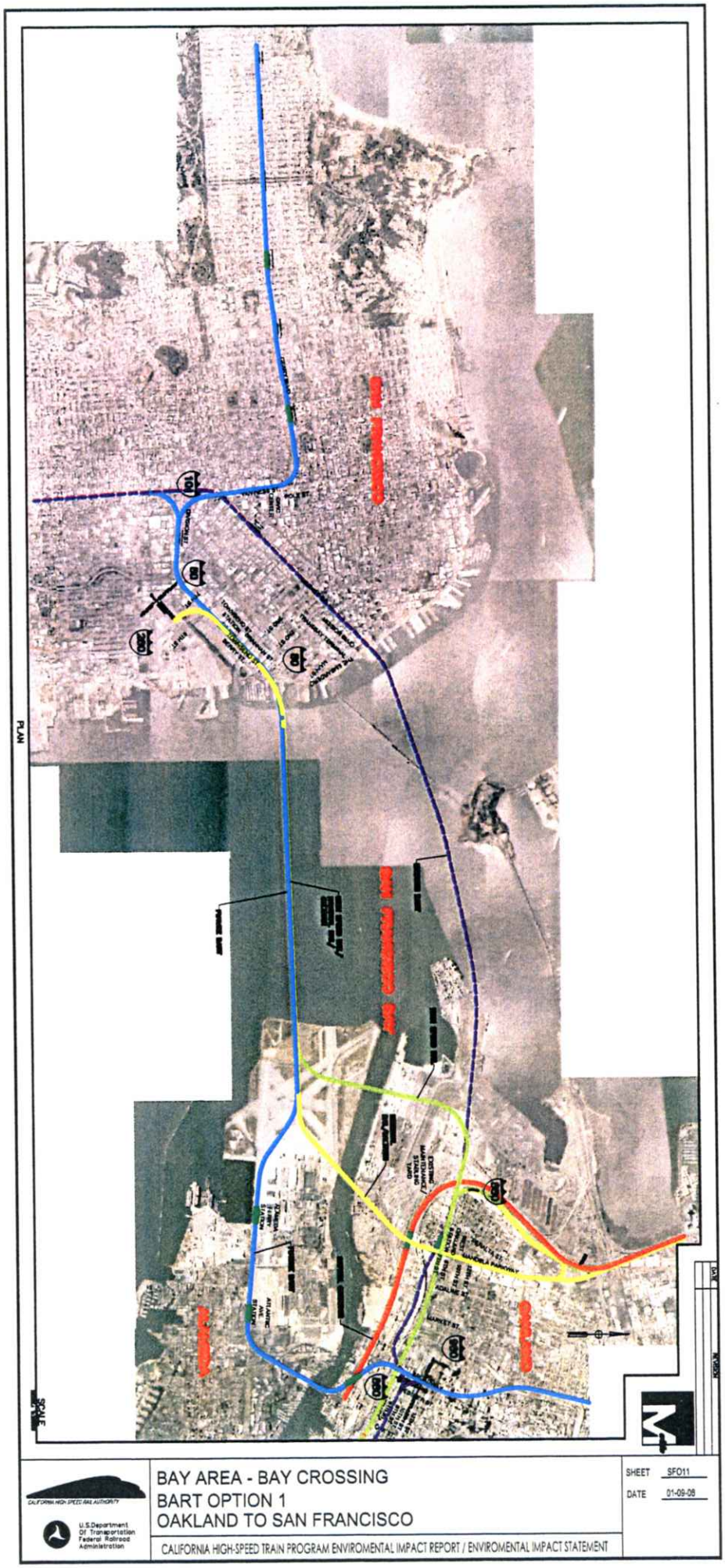


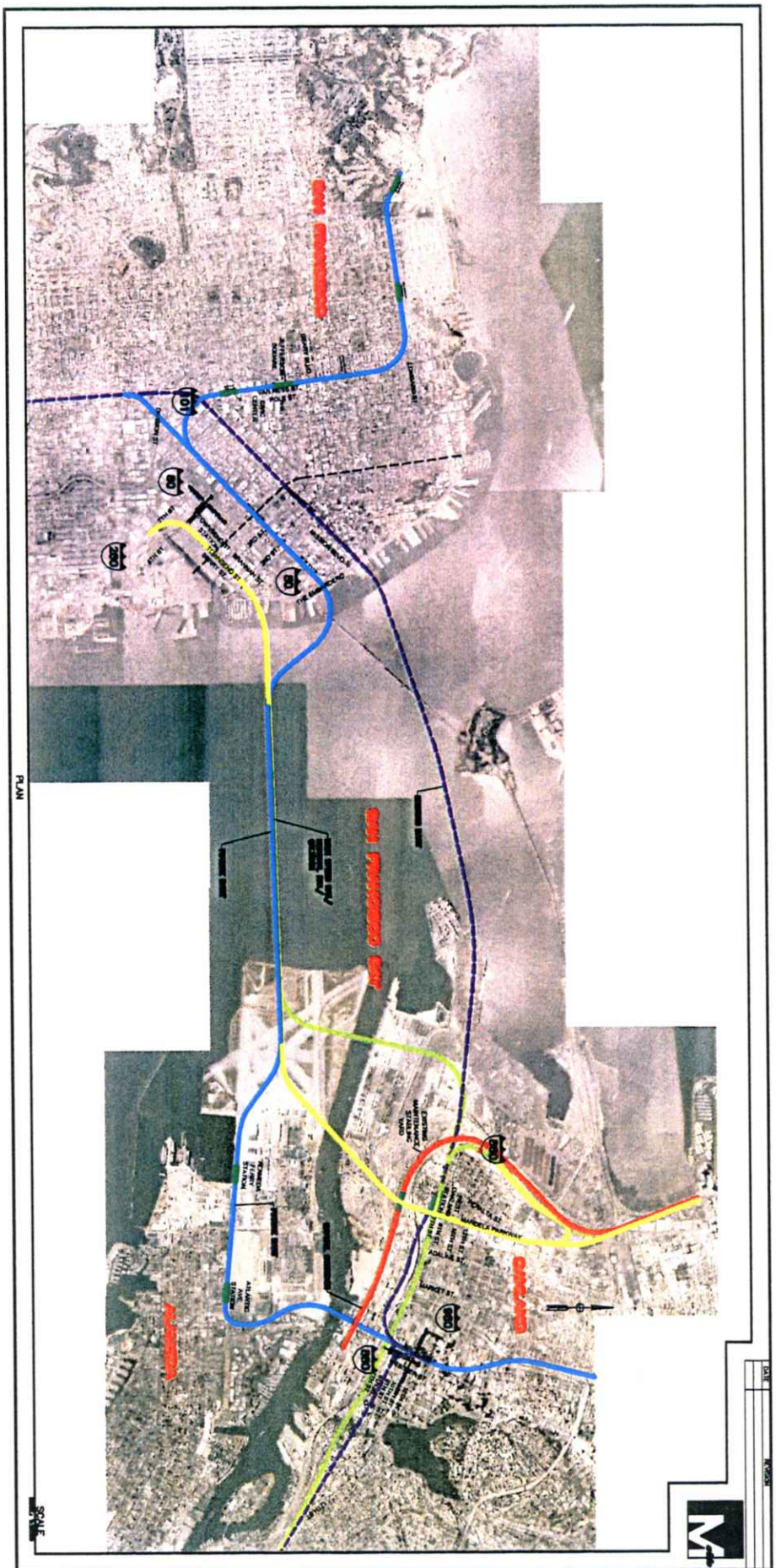
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

U.S.Department Of Transportation Federal Railroad Administration

BAY AREA - BAY CROSSING
BART OPTION 1
OAKLAND TO SAN FRANCISCO

CALIFORNIA HIGH-SPEED TRAIN PROGRAM ENVIROMENTAL IMPACT REPORT / ENVIROMENTAL IMPACT STATEMENT

SHEET SFO11
DATE 01-09-08



CALIFORNIA HIGH-SPEED RAIL AUTHORITY

U.S.Department Of Transportation Federal Railroad Administration

BAY AREA - BAY CROSSING
BART OPTION 2
OAKLAND TO SAN FRANCISCO

CALIFORNIA HIGH-SPEED TRAIN PROGRAM ENVIROMENTAL IMPACT REPORT / ENVIROMENTAL IMPACT STATEMENT

SHEET SFO20
DATE 01-30-07

Functional Lay-out principles

There are several concepts for connectivity station configuration and schedule coordination, depending on the local track lay-out and on operations. In terms of transfer, three functional lay-out principles have been identified:

1. Cross platform transfer
    a. Two track, single center platform for two rail service lines that cross each other with schedule meets in the predominant direction
    b. Four track, double center platform for two rail service lines that cross each other with pulsed schedule coordination
    c. Paired two track, single center platform for two rail service lines that cross each other with schedule meets in separate directions at each of the paired stations.
    d. Four track, double center platform for two rail service lines that serve as local and express heading in the same direction and schedule meets in the same direction.
    e. Paired four track, double center platform for two rail service lines that cross each other with schedule meets in separate directions at each of the paired stations.

2. Common concourse transfer
    a. Side by side track and platform configuration
    b. Stacked track and platform configuration

3. Combination of Concept 1 and 2

The cross platform method of transfer is facilitated on routes with similar equipment allowing the track infrastructure to be less complicated (costly). It can be used for very simple stations such as **Napa Junction** and **Pajaro** and more complicated stations such as **Tracy** or very high frequency service such as BART.

An example of concept 1a and/or 1b would be **Napa Junction** where you have Napa to Vallejo trains crossing the Novato to Fairfield trains. If the service is frequent Concept 1a is more applicable. A more detailed patronage analysis would need to be made to determine whether the majority of the passengers would travel in the same direction or opposite direction. For infrequent service a pulsed four track station 1b, would reduce passenger waiting time. A center platform(s) would be used at these locations and the trains would wait for each other to accept the transferring passengers.

Pajaro could also be used as an example of 1a and / or 1c with **Castroville** as the paired station. If the patronage volumes justify it then the possibility exists in the case of Pajaro to pair two stations where at the first station you transfer in the opposite direction (from Gilroy to Santa Cruz) and the second in the same direction (Gilroy to Monterrey) .

Concept 1d would be for the express and local concept for regional rail service or high-speed rail with regional rail overlay service. These types of stations have four tracks with two center platforms where the local trains wait for the express trains to accept the transferring passengers. The express or high-speed passenger would transfer to the local for destinations closer to the local stations then the next express stop and vice versa for the local passenger. An example of this would be the potential stations like **Livermore**. It is usually preferable for the more local trains to wait for the express trains in order to keep the express on the priority schedule.

An example for Concept 1e would be BART in **Oakland 12th Street** with the potential four track scenario from 12th Street to MacArthur. 12th Street Station would have cross platform transfer for San Francisco to Fremont passengers (and vice versa) and at MacArthur for San Francisco to

Richmond passengers. This involves fairly sophisticated track geometry and construction of the fourth track through Oakland.

Tracy would be an example of 2a and 3. The common concourse type concept can be used where different equipment will be used. The passenger would need to go down (or up) to the concourse then go to the other train service location and go back up (or down) to the appropriate platform. This concept can also be used in conjunction with the "cross platform" concept such as 1d. The high-speed rail station would be a four track, two center platform concepts for "cross platform" transfer between the high-speed rail and regional rail overlay service for passengers traveling in the same direction. The adjoining regional rail service from Patterson to Pittsburgh if operated as standard equipment would need to be on separate adjoining tracks from the high-speed rail service. Passengers from this service wanting to transfer to high-speed rail would need to go down to the concourse and back up to the appropriate high-speed rail platform.

Concept 2b is used in more congested areas such as San Francisco, San Jose and Oakland. As an example the **4th and Townsend** station is in a very narrow street that required this stacked configuration. Passengers from (to) the high-speed rail system would need to use the vertical circulation elements to transfer to either the regional rail system or the more local BART system.

For major destination / origination stations that have very frequent service the schedule coordination becomes less important. Examples of these types of stations are **Diridon** Station in San Jose, **4th and Townsend** in San Francisco and the **West Oakland** Station in Oakland.

Land use

The local land use should be coordinated with the connectivity points as per the policies of the various rail service agencies. Transit Oriented Development TOD would be enhanced at these major connectivity points. Developers are showing increasing interest to provide residential/commercial facilities at these locations; Union City being a prime example.

Station Descriptions

4th and Townsend, San Francisco

General – The 4th and Townsend Station is located in the Mission Bay area and is part of the Transbay Transit Center project as well as the CAHSR project. It is adjacent to the existing 4th and King terminal for Caltrain. The design options are being coordinated with the Transbay Transit Center (TTC) team. The loop through the TTC is being designed by the TTC team and is part of the TTC project. The station is being designed to accommodate BART, High Speed Rail and Regional Rail (Caltrain). BART is being considered at this location in one of the San Francisco distribution options in the event a new transbay tube is required for BART. High speed rail and regional rail are being designed with a connection to the East Bay along with the BART alignment. The design criteria being used for the transbay tube is the most stringent of the three services.

Existing Land Use – The area is in the process of being redeveloped with a mixture of low to mid rise residential and commercial buildings. The existing uses are residential, commercial and light industrial.

Station Description - The new station complex would be in an underground configuration. BART, from the future transbay tube, would be at the lowest level with high speed rail and regional rail directly above. A passenger concourse would need to be constructed between the high speed rail platform level and the street above. The station is constrained geometrically to the east and west by the vertical grades required to go over the drainage structure to the bay inlet and to go under the Bay which has a depth of ~60' in the vicinity of the proposed transbay tube. Further geometric constraints are initiated by the track geometry to the Transbay Transit Center; either by the tracks on 2nd Street or the potential loop coming from Main Street.

Connecting Rail and Passenger Services – CaHSR, Regional Rail, BART, Muni (Surface and Central Subway) are the connecting rail services at this station location. Arriving long distance travelers on the high speed rail system have the opportunity at this location to conveniently transfer to more local rail services; regional rail for medium distance, BART for a little more local destinations and MUNI for San Francisco destinations. These transfers can be accomplished by using the vertical circulation elements within the Station complex. In reverse the long distance traveler can reach the high speed rail system by use of the more local rail services.

Existing Freight Railroad services – There are no existing freight railroad services in this area. The existing Caltrain yard has the potential to receive freight service for maintenance if necessary.

Local Access – Access to I-280 is within two blocks and to I-80, the Bay Bridge and highway 101 is within three to four blocks. Access to and from Market Street is via 3rd and 4th Street.

Transit Oriented Development Opportunities – The area is actively being redeveloped as part of the Mission Bay district. New buildings have recently been erected to the east of 4th Street and along King Street. There is the potential for air-rights development over the existing Caltrain Station Area. With the advent of the Central Subway, the high speed rail system and the potential connection to the east bay by BART, the area to the west, both north and south of Townsend have potential for redevelopment.

Limitations and Other Impacts – this will be a fairly complicated and expensive station but will also provide a unique connectivity point for multiple transit providers. This is especially relevant if BART is extended in a new transbay crossing.

Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

4th St. and Townsend Station
Functional Lay-Out

WORK DOCUMENT

November 18th, 2005 - v4

REGIONAL RAIL

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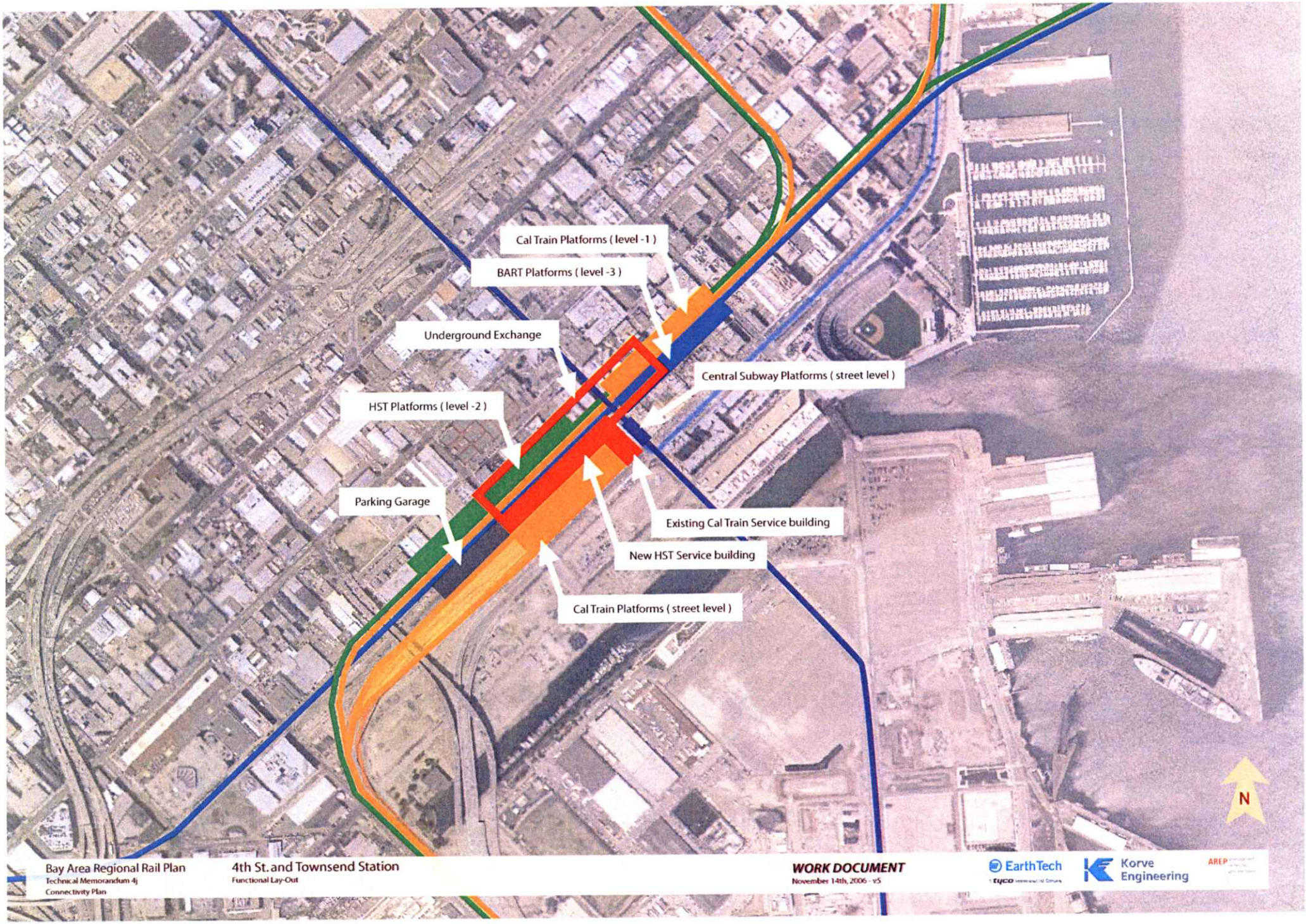

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

4th St. and Townsend Station
Functional Lay-Out

WORK DOCUMENT
November 14th, 2006 - v5

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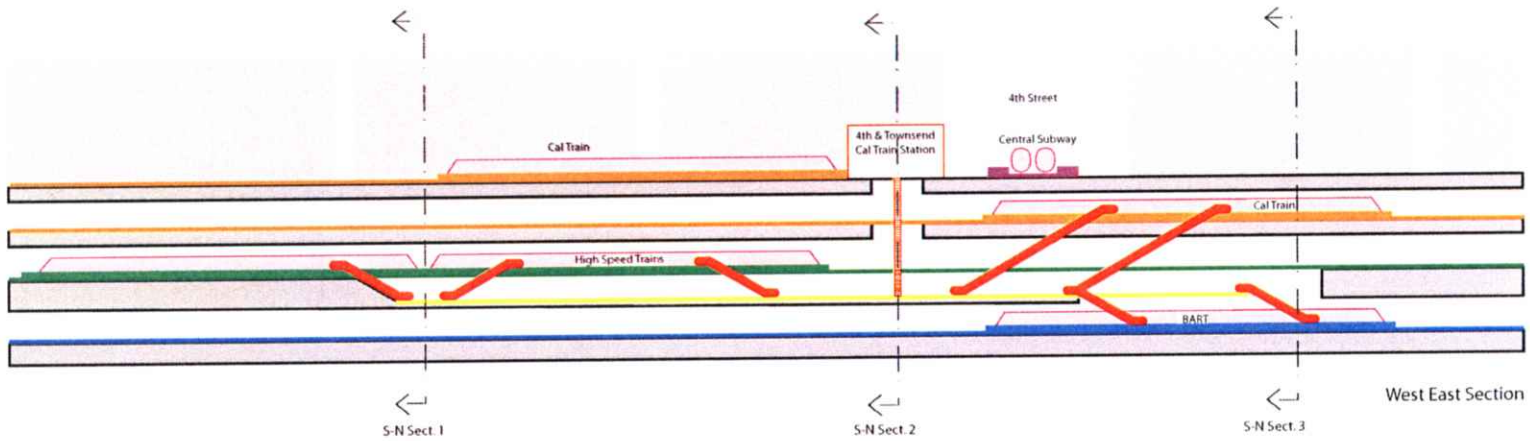
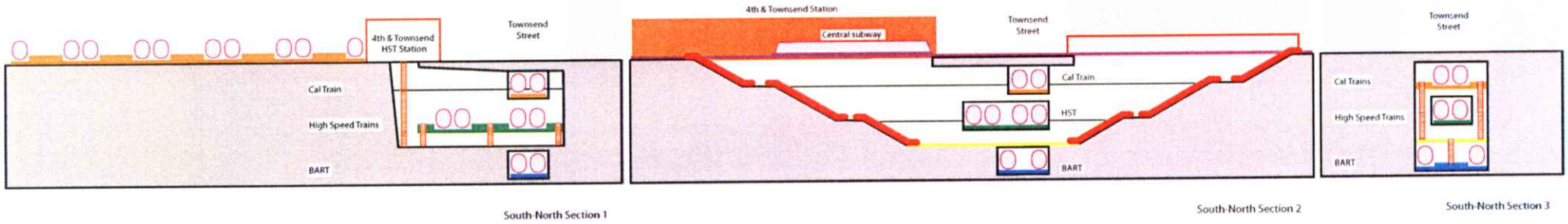


West East Section



South-North Section 1

South-North Section 2

South-North Section 3

South - North Sections

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

4th & Townsend Station
Functional Lay-Out

WORK DOCUMENT
November 15th, 2006 - v5

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Livermore

General – The existing ACE station and the associated bus terminal is located near downtown Livermore convenient to the recent redevelopment. Expanding this site to a full connectivity station with BART, Regional Rail and High Speed Rail would require significant right-of-way acquisition. An alternate location would be close to Isabel Avenue and is shown as a West Livermore Station. This Station is at the edge of current development and close to El Charro Road which could provide BART access. The West Livermore Station with connections to BART, Regional Rail and High Speed Rail is applicable to Alternative 2. Alternative 1 would require a BART extension to Greenville Avenue for a connection to the existing ACE regional rail service.

Existing Land Use – The downtown area is well developed with residential and commercial with significant recent redevelopment. The West Livermore site is presently vacant to the north and south with residential and commercial development to the east. The western sites are mostly old gravel pits (ponds). There are designated regional recreation areas further to the west.

Station Description – The tracks are envisioned to be all at grade with pedestrian access either from below the tracks. BART would the furthest to the north as a center platform type station. Tailtracks would be to the east behind the station. The regional and high speed rail station would be directly adjacent to the BART tracks as a four track station; two platform tracks and two express tracks. A minimum of two freight tracks would need to me maintained through the Station for the local and long distance freight traffic.

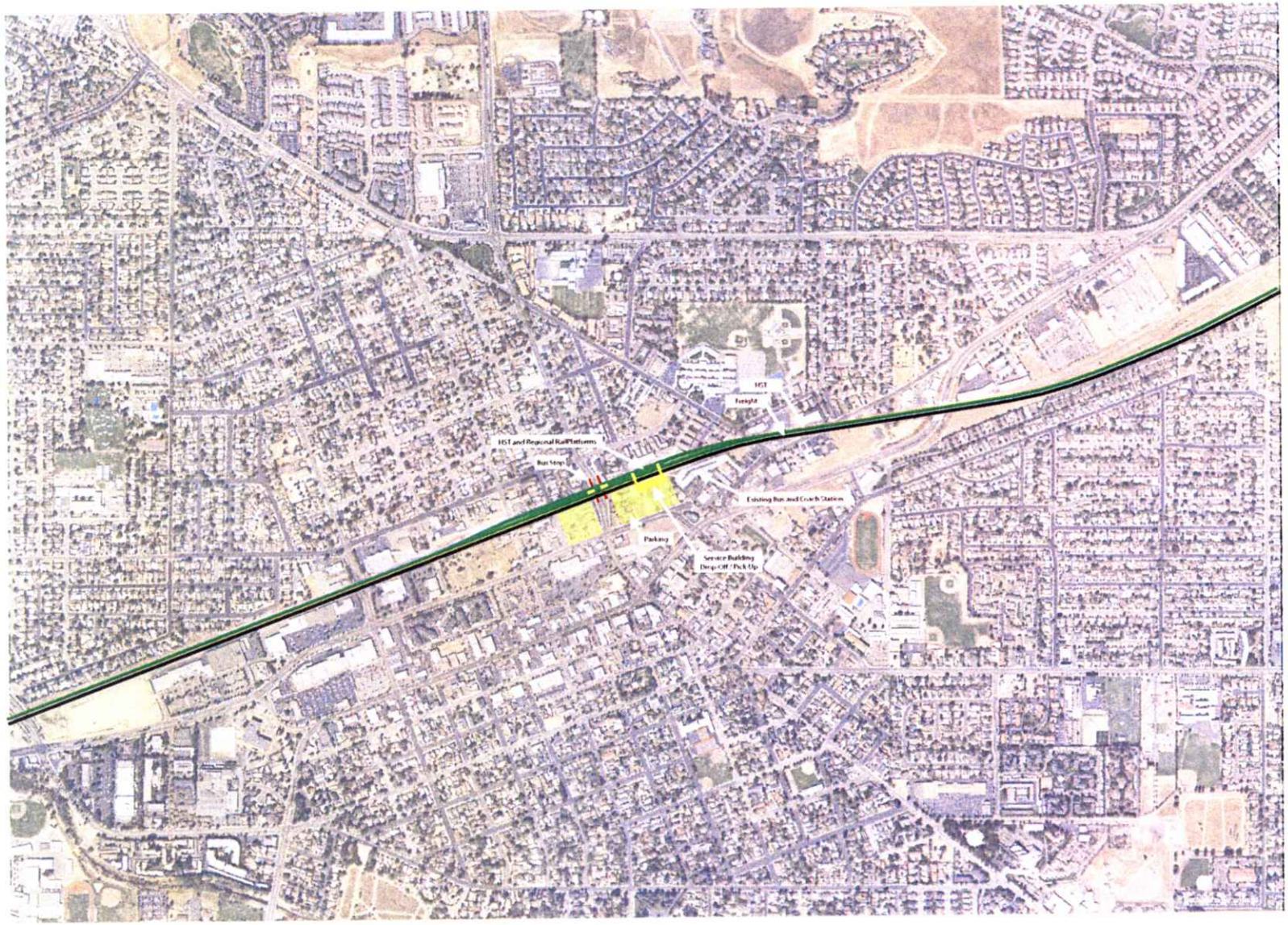
Connecting Rail and Passenger Services – West Livermore Station has the potential to become a major connectivity point for the Bay Area especially in any phased scenario. The long distance high speed rail passenger has the opportunity to transfer to both BART for short local distance destinations and more distant local destinations on the regional rail service. Direct BART service to the Dublin Pleasanton line serving the Tri-valley and further to Oakland and San Francisco would terminate at this location. Regional rail service to San Jose and the Peninsula not served directly by high speed rail could be accessed at this location.

Existing Freight Railroad services – The UPRR is an important transcontinental connector from the Port of Oakland through this corridor and also has the potential to serve an "inland port" that could dramatically reduce truck traffic on I-580.

Local Access – Isabel Avenue and Stanley Boulevard are the major local access roadways. Isabel Avenue is fully grade separated with Stanley and the railroad. Isabel avenue provides access to the local airport and I-580.

Transit Oriented Development Opportunities – The West Livermore site provides greater opportunity for transit oriented development than the existing Livermore station site. The existing site is closer to the existing downtown with its recent redevelopment. The site is presently under study for redevelopment by the local authorities.

Limitations and Other Impacts – right-of-way acquisition for a station downtown would create significant impacts.



Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Livermore Station

Functional Lay-Out

WORK DOCUMENT

October 27th, 2005

REGIONAL RAIL

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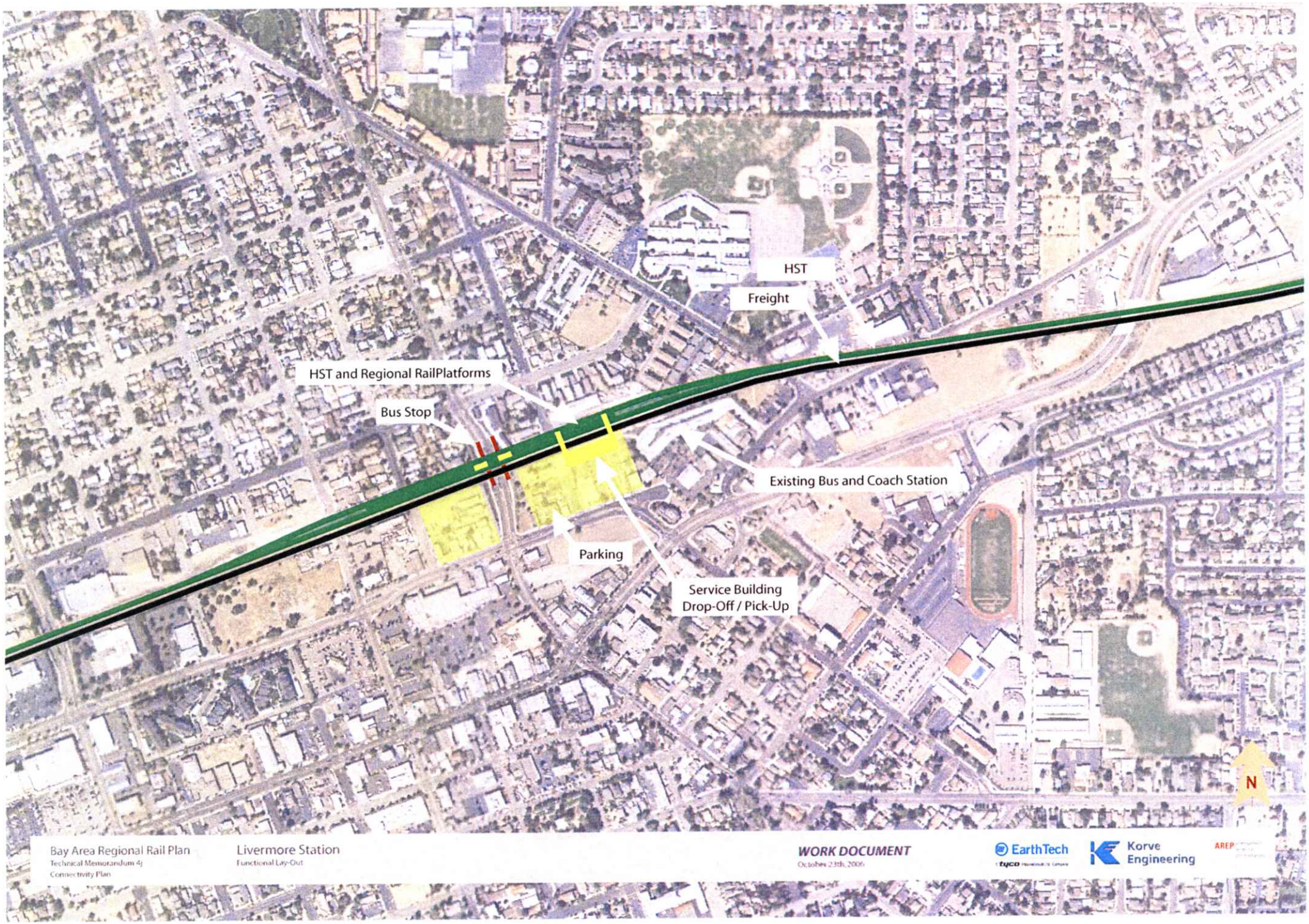

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Livermore Station
Functional Lay-Out

WORK DOCUMENT
October 23th, 2006

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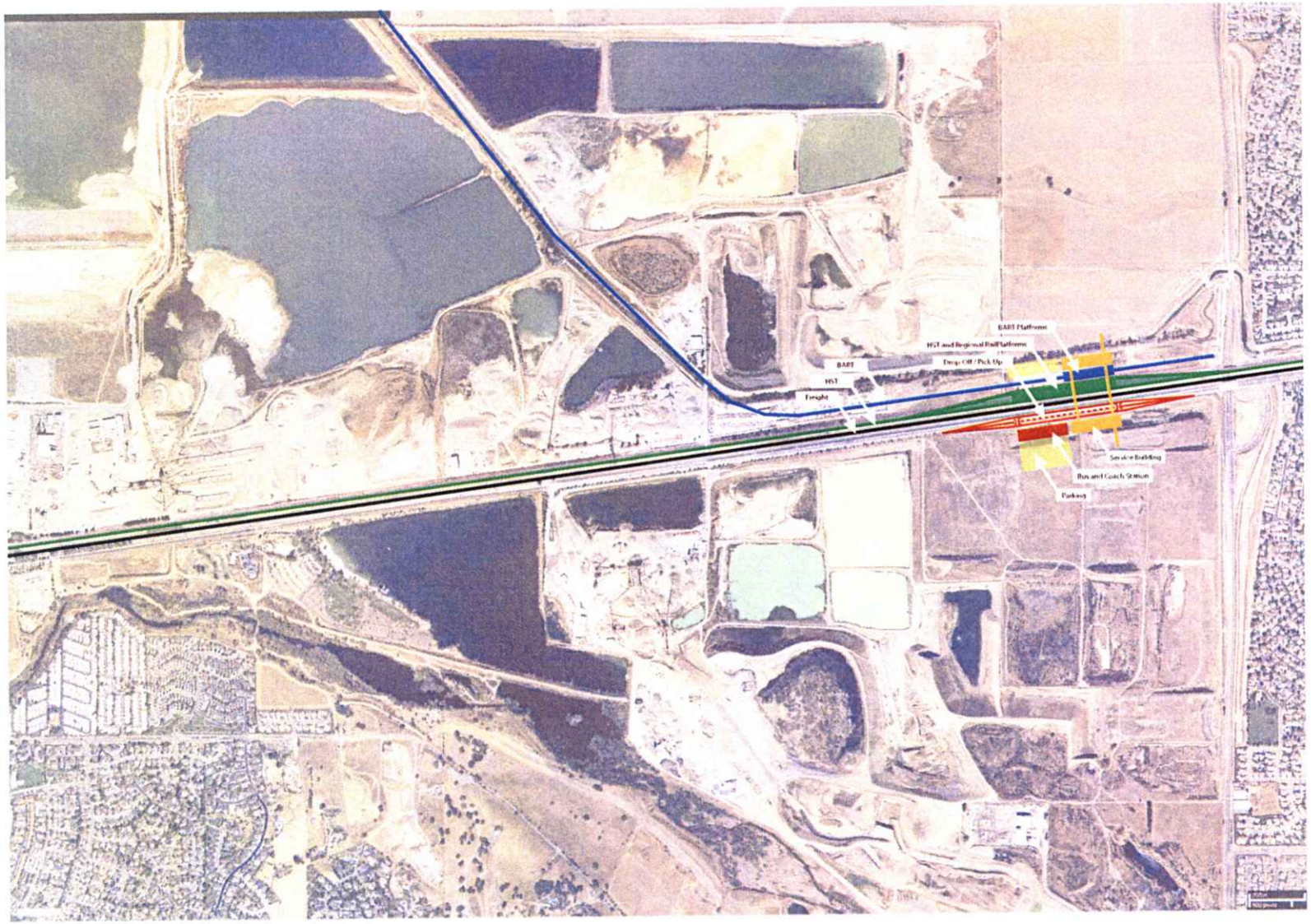

Bay Area Regional Rail Plan

Technical Memorandum 4j

Connectivity Plan

West Livermore Station

Functional Lay-Out

TOD Opportunities

WORK DOCUMENT

REGIONAL RAIL

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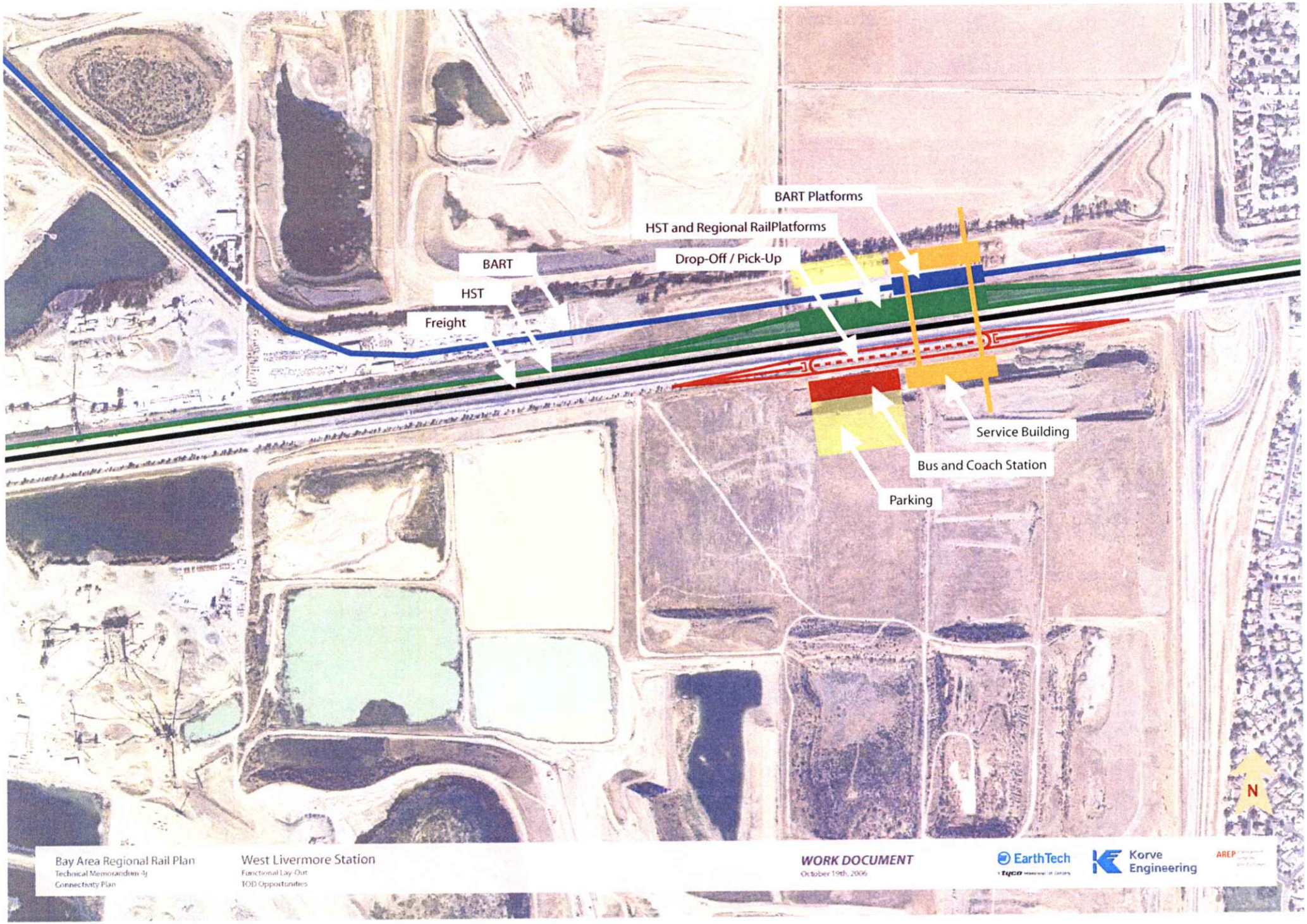

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

West Livermore Station
Functional Lay-Out
TOD Opportunities

WORK DOCUMENT
October 19th, 2006

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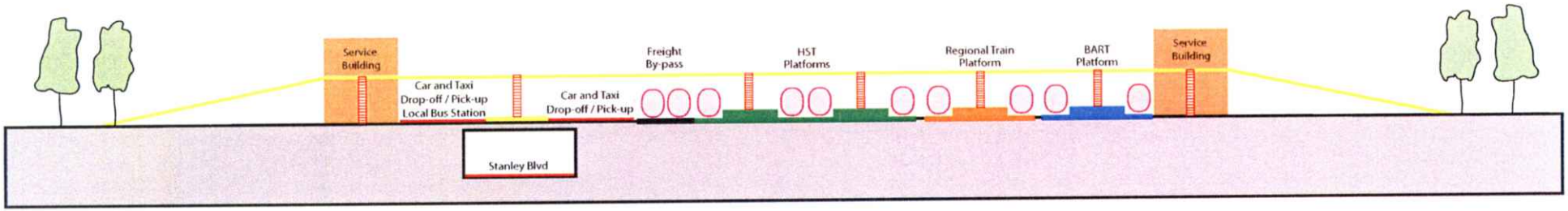

South North Section

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Livermore Isabel Station Section
Functional Lay-Out

WORK DOCUMENT
January 2nd, 2007 - v1

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Napa

General – Located at the crossing of Highway 29 and the old SP Napa branch and the old NWP connector the UPRR. Service from Napa to Vallejo would cross service from the SMART corridor to Fairfield Suison.

Existing Land Use – The surrounding area of the station site is mostly agricultural and commercial/industrial.

Station Description – The station is in a simple two track center platform configuration directly beneath highway 29. Bus dropoff would be on highway 29 with vertical circulation down to the platforms.

Connecting Rail and Passenger Services – This station would offer transfers for passengers from Napa wanting to go to Fairfield and beyond and also passengers from the SMART corridor wanting to go to Vallejo or Napa. Transfers would happen on the same center platform for a direct cross platform transfer. How trains would meet and which transfer direction (either in the same direction or in the opposite direction) to favor would depend on further patronage analysis in the future. Passengers would need to cross a single track when descending from the drop-off location above on highway 29.

Existing Freight Railroad services – There is very little freight traffic on these lines

Local Access – Highway 29 would be the major access to the station.

Transit Oriented Development Opportunities – The surrounding land has the potential for redevelopment. This should be explored further in future studies.

Limitations and Other Impacts – NA

N

Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Napa Junction Station

Functional Lay-Out

WORK DOCUMENT

November 13th, 2006 - v2

REGIONAL RAIL

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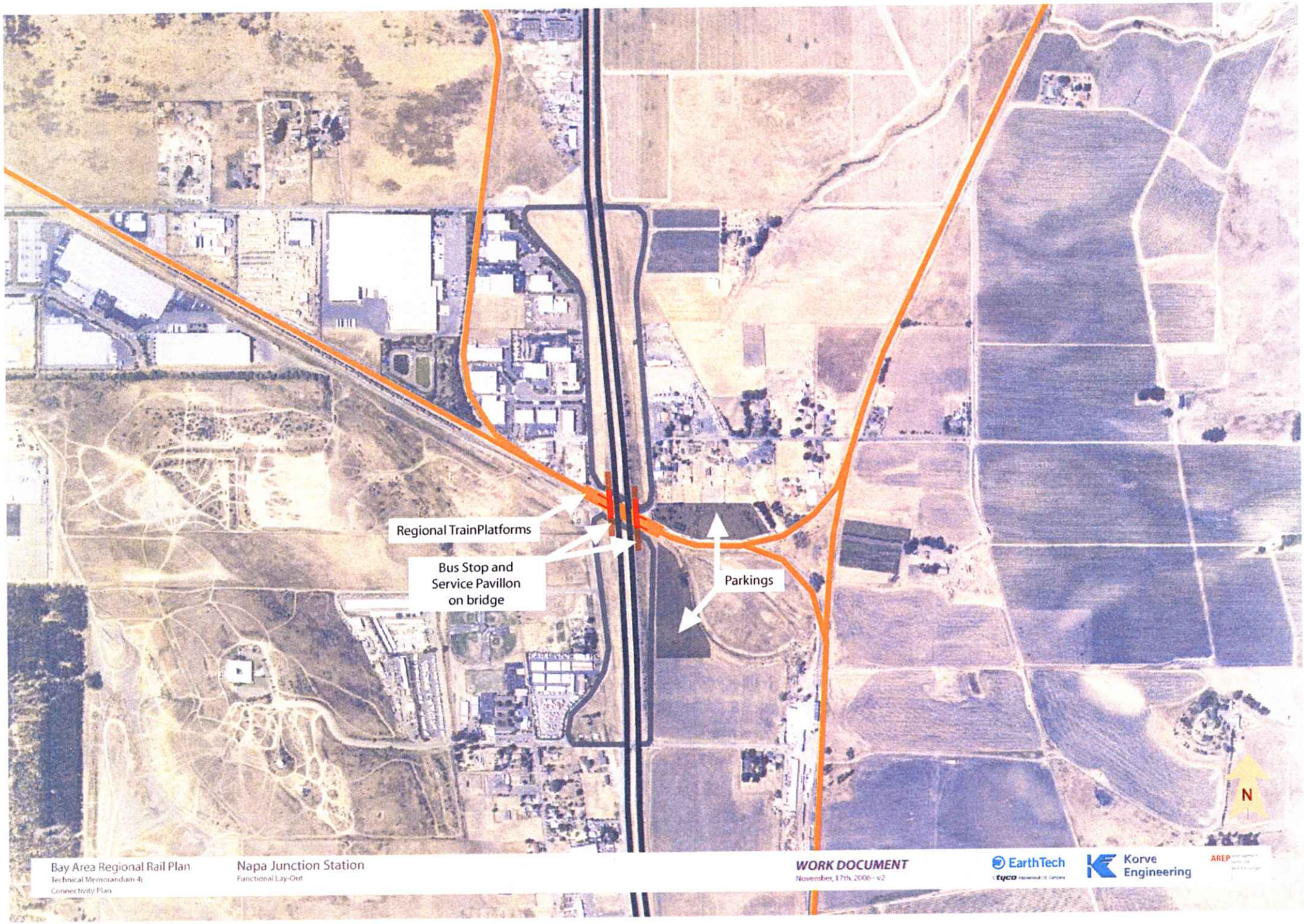

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Napa Junction Station
Functional Lay-Out

WORK DOCUMENT
November, 17th, 2006 - v2

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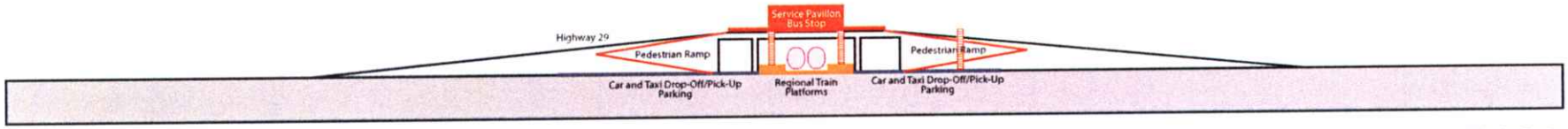


West East Section

Pajaro

General – This station is located near the junction of the UPRR Coast subdivision and the Monterrey to Santa Cruz line.

Existing Land Use – The station site is surrounded by mostly agricultural land with some residential, commercial/light industrial to the north. The town to Pajaro and Watsonville are to the north.

Station Description - The station is in a simple two track center platform configuration. A freight by-pass track is to the east of the station. Platform access would be via protected at-grade pedestrian crossings.

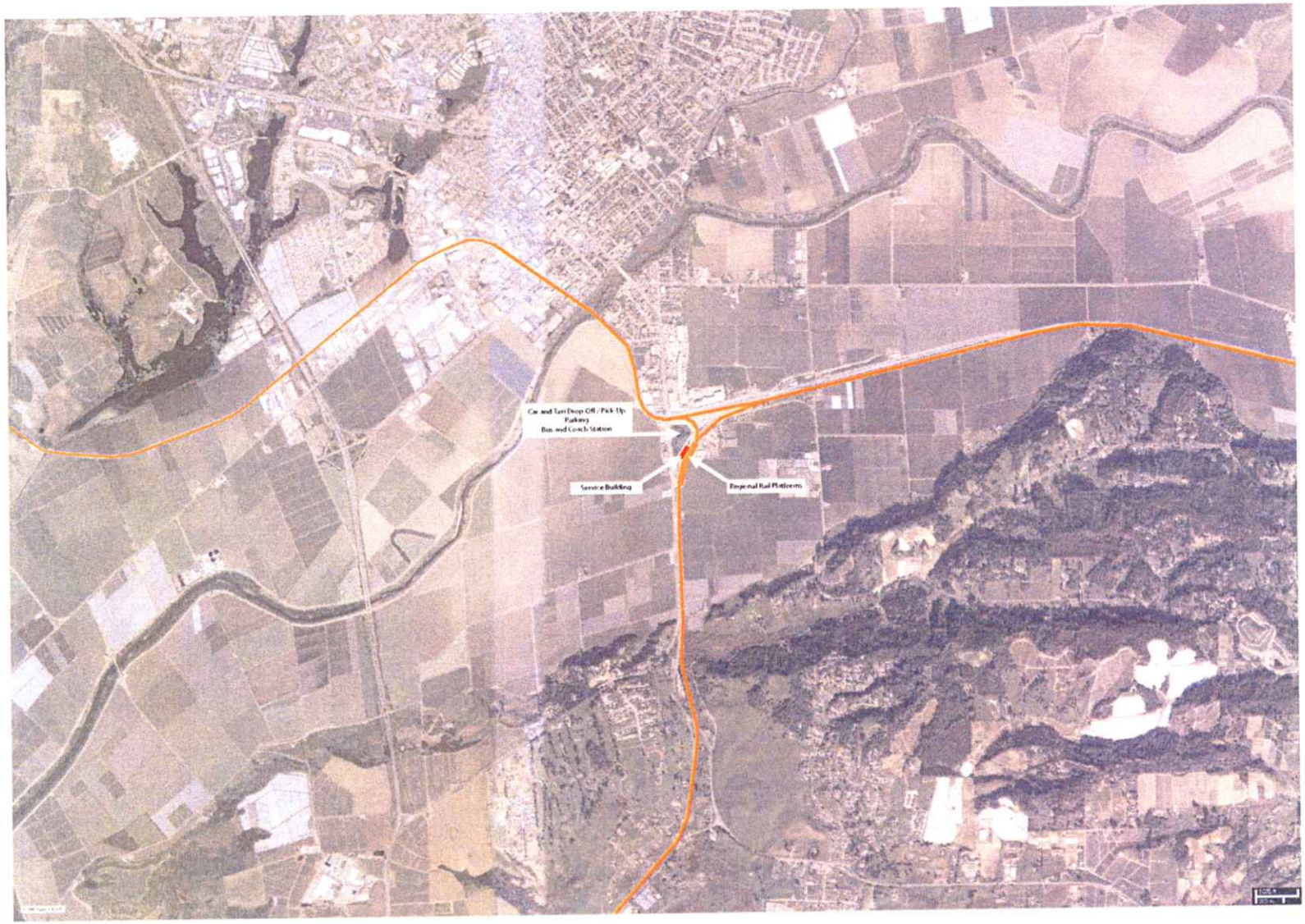
Connecting Rail and Passenger Services – The regional rail service from San Jose to Salinas would connect with the Santa Cruz to Monterrey service at this point. The center platform would allow for a train meet between the services for a direct across the platform transfer. This station could also function as a pair with a station at Castroville; where passengers on the San Jose to Salinas trains would transfer to the Santa Cruz to Monterrey train at Pajaro for Santa Cruz and at Castroville for Monterrey destination.

Existing Freight Railroad services – The Coast subdivision carries freight from Southern CA to the Bay Area. There is little freight on the line to Santa Cruz.

Local Access – Highway 129 is the major access road to the site. Elkhorn and San Juan Road are the more local access facilities.

Transit Oriented Development Opportunities – The surrounding land has the potential for redevelopment. This should be explored further in future studies.

Limitations and Other Impacts – NA



N

Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Pajaro Station

Functional Lay-Out

WORK DOCUMENT

November 20th, 2006 - v1

REGIONAL RAIL
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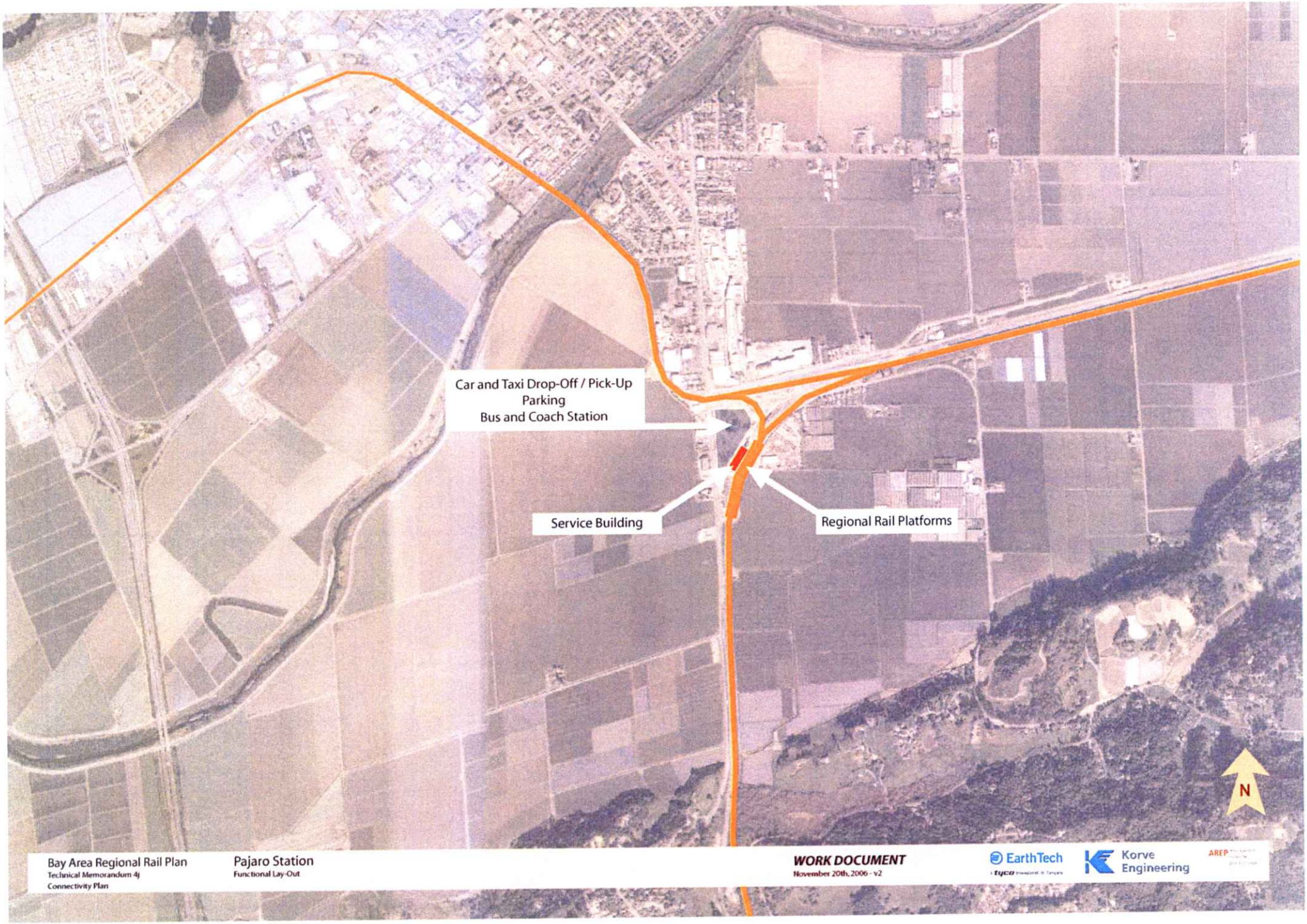

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Pajaro Station
Functional Lay-Out

WORK DOCUMENT
November 20th, 2006 - v2

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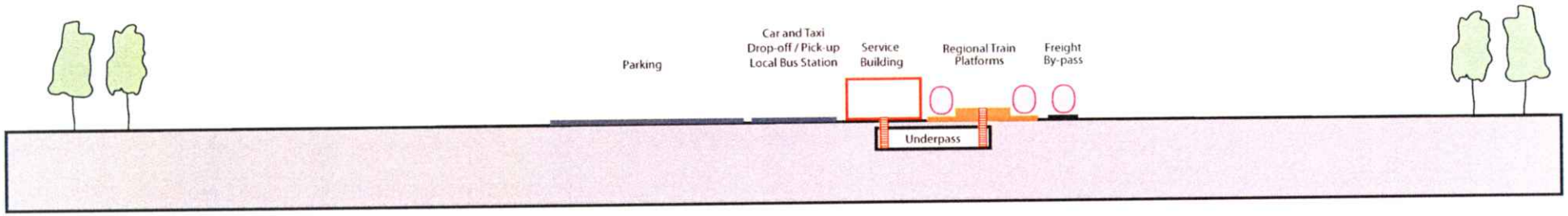
AREP



West East Section

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Pajaro Station Section
Functional Lay-Out

WORK DOCUMENT
January 30th, 2007 - v1

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Richmond

General –BART, Regional Rail (connection to Marin under Alternative 2) are the connecting services at this Station. At present Richmond is one of the few Bay Area stations that provide connectivity between rail services; BART, Capitol Corridor and the San Joaquins. It will remain that way in the future with the potential of adding additional service from Marin; when the San Rafael Bridge needs to be reconstructed or the patronage level is obtained to justify this rail service level and connection across the bay. The service from Marin and Sonoma would come across the bay to Richmond along the old railroad alignment parallel to Ohio Avenue and continue to Merced via Hercules, Martinez, Pittsburgh, Stockton and Modesto.

Existing Land Use – The area immediately surrounding the existing Station site is mostly residential in character. The BART station site is presently under redevelopment with Transit Oriented Development; multistory apartment buildings.

Station Description – The station will remain in its current location with BART on the east side and the existing regional rail station (Capitol Corridor and San Joaquin service) on the west being modified to allow for the additional freight bypass tracks required for the very heavy freight traffic from the Port of Oakland to Sacramento and beyond. A new light weight passenger service has been shown between the BART alignment and the freight tracks.

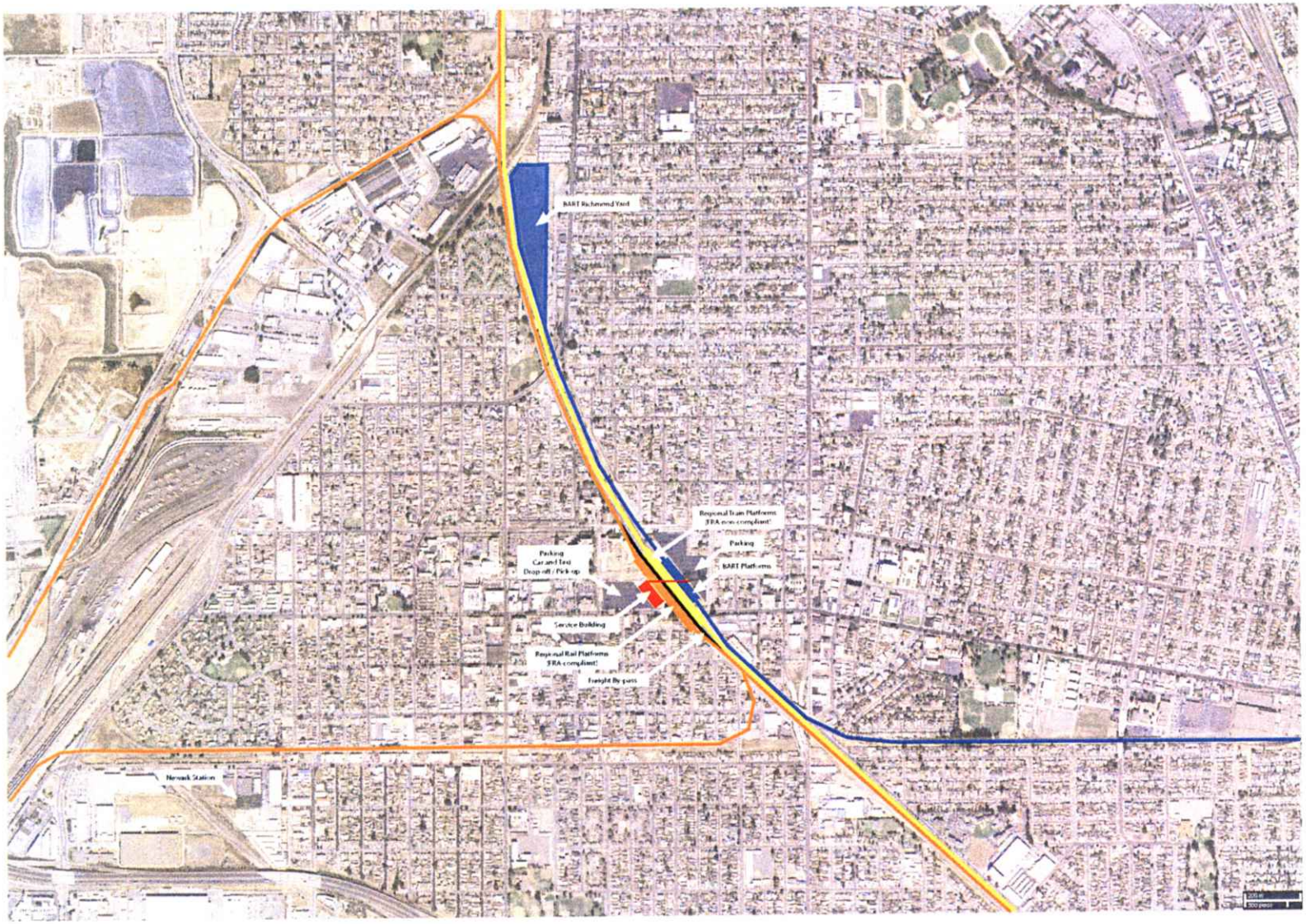
Connecting Rail and Passenger Services – All rail services would be at the same level with the common concourse below. There would be no opportunity for cross platform transfer under Alternative 2. The standard train passengers from across the Bay bound for Oakland and San Francisco would need to transfer to either the BART system or the light weight regional rail system via the underground concourse. If light weight equipment is not utilized on this corridor then cross platform transfers could become reality.

Existing Freight Railroad services – The freight line passing through this Station is a major transcontinental freight corridor to points east in the United States; Chicago. The Port of Oakland traffic is expected to increase by 200% to 300% over the foreseeable future. A corresponding increase will occur over this section.

Local Access – This station area is mostly surrounded by local streets which will need to be used for access. 23rd and McDonald Avenue are the major local streets.

Transit Oriented Development Opportunities – there is some TOD happening on the site currently; it is restricted to the BART Station site. More of the site could be developed.

Limitations and Other Impacts – Surrounding residential area.



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Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Richmond Station

Functional Lay-Out

WORK DOCUMENT

November 2005, 2006

REGIONAL RAIL

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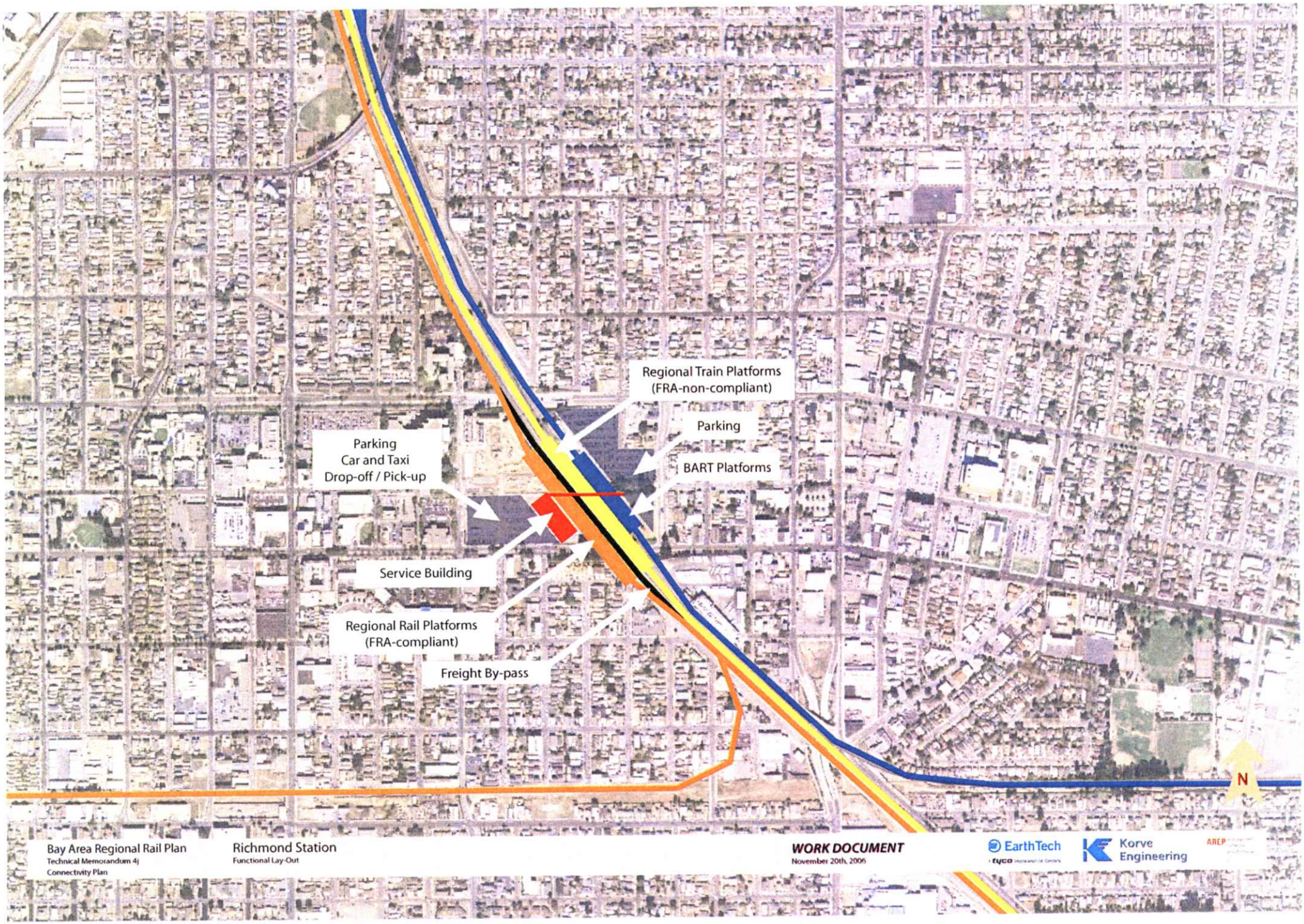
Regional Train Platforms
(FRA-non-compliant)
Parking
BART Platforms
Parking
Car and Taxi
Drop-off / Pick-up
Service Building
Regional Rail Platforms
(FRA-compliant)
Freight By-pass
N
Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan
Richmond Station
Functional Lay-Out
WORK DOCUMENT
November 20th, 2006
EarthTech
tyco
Korve
Engineering
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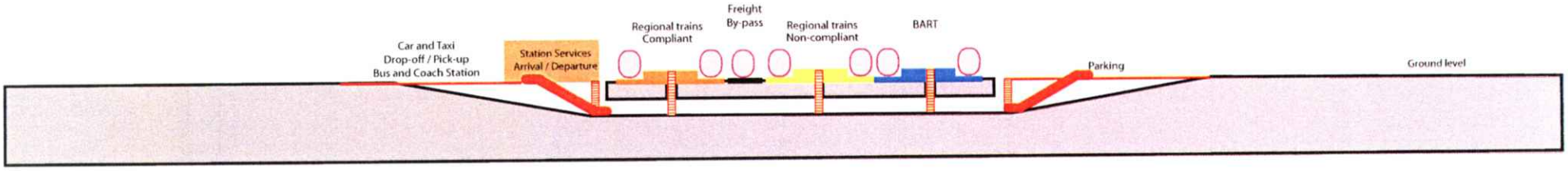

West East Section

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Richmond Station
Functional Lay-Out

WORK DOCUMENT
November 20th, 2006

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Sacramento

General – This station is currently under design by others and would be incorporated into the Regional Rail Plan. No additional design is being done under this Study. There is a significant opportunity for development which is actively being pursued for this location.

Existing Land Use – currently vacant land with existing transportation facilities on the southeast for LRT, Intercity trains (Capitol Corridor and the San Joaquins) and AMTRAK.

Station Description – The existing historic station structure is under consideration to be moved along with the existing station tracks.

Connecting Rail and Passenger Services – This is a major connectivity point for northern California. This will be a terminus for high-speed rail and for some of the regional rail services; Sacramento to Fresno, Sacramento to San Jose and the existing San Joaquin service. Through services include the long distance AMTRAK services, Zephyr and the regional rail services from Auburn (and beyond) to Martinez, Oakland and to San Jose.

Existing Freight Railroad services – This is a major freight corridor route from Oakland to points east over the Sierras and trains from the Central Valley heading to Oakland.

Local Access – Being developed as part of the redevelopment plan.

Transit Oriented Development Opportunities – Major development opportunities are presently being studied by others.

Limitations and Other Impacts – The present redevelopment plan could be a restriction to the High Speed Rail terminal station and necessary ancillary functions.

Diridon Station, San Jose

General – Diridon is the major rail station in San Jose. At present this station is served by ACE, AMTRAK, Caltrain, and the Capitol Corridor Service. In the future BART along with high-speed rail is anticipated to stop here. The VTA LRT system also stops here at present. The UPRR Coast subdivision passes through the station, normally on track 1 directly adjacent to the existing station. The freight connection to the Vasona line crosses over all tracks directly south of the existing station. If high-speed rail enters the Bay Area from the south the station will be a through station with continuing service to San Francisco and Oakland. If it enters the Bay Area over the Altamont then Diridon will become a terminus station.

Existing Land Use – There is mixed use around the station with recent residential development to the west, the sports arena to the north and planned major commercial development to the east.

Station Description – At present the regional rail services have at grade platforms and tracks with a limited concourse for access beneath the tracks. A major portion of the Caltrain trains terminate at Diridon. All of the Capitol Corridor Service and ACE trains also terminate at this location. The terminating trains require additional platform time. There is no opportunity to expand the number of tracks to the east or west due to the presence of the LRT system and the existing historic station. Track one is for the AMTRAK trains and the UPRR through trains. Any additional trains such as the high-speed rail trains would require a separate level especially if more than just two tracks are required. Six tracks and three platforms have been designated for high-speed rail. These are envisioned on a level above the existing grade level tracks for the regional trains. A major concourse between these two levels or above the two rail levels is anticipated for passenger access to all systems including the future BART.

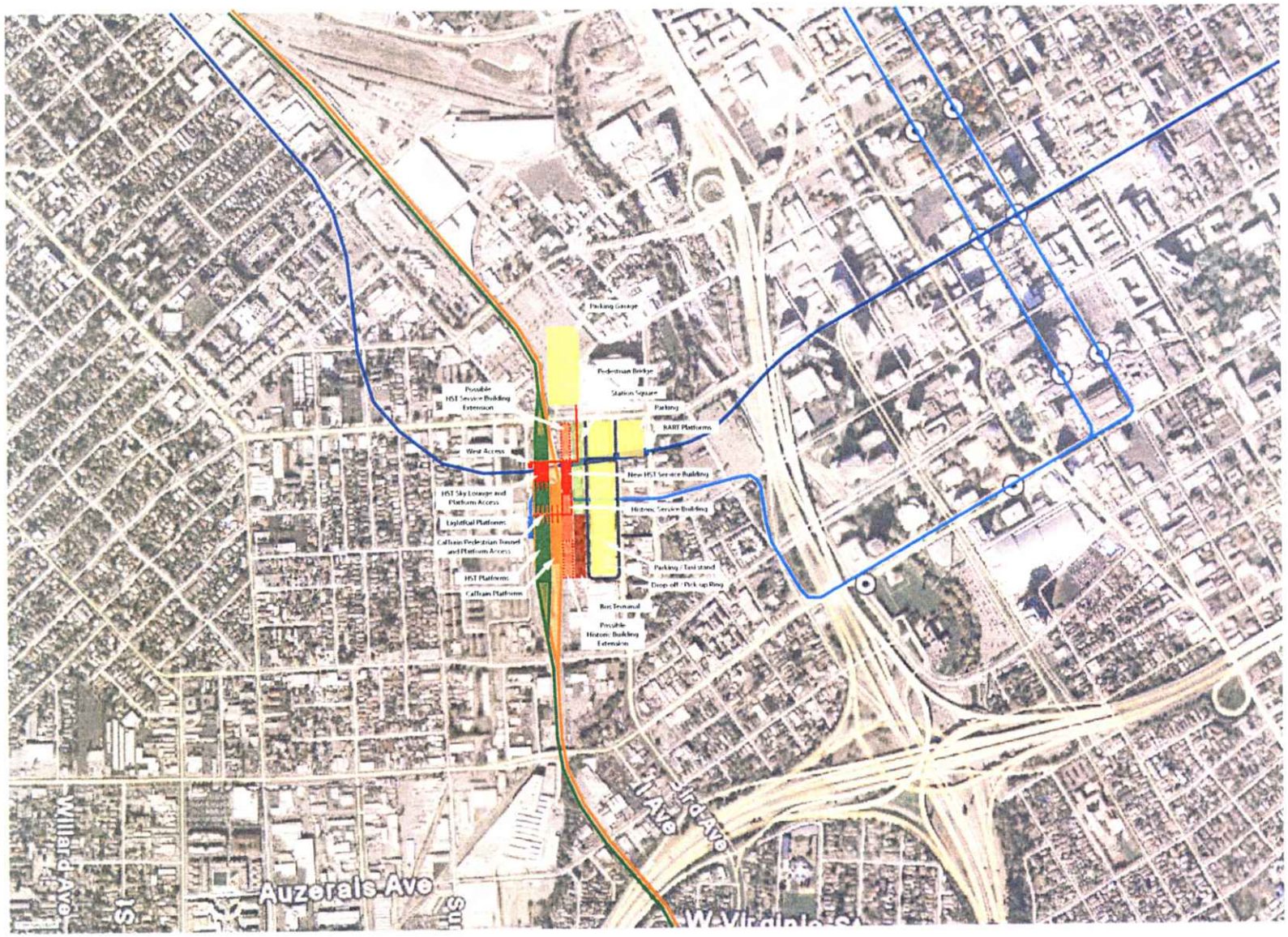
Connecting Rail and Passenger Services – The regional rail system, ACE, Caltrain, and the Capitol Corridor Service and BART system would provide local distribution and access to the high-speed rail system. This would be a major connectivity point for high-speed rail.

Existing Freight Railroad services – The UPRR Coast subdivision along with the local service along the Vasona line passes through here.

Local Access – There is good local access with a short distance to the interstate system

Transit Oriented Development Opportunities – Major redevelopment has been under consideration for this area for some time. The residential development on the west has been completed.

Limitations and Other Impacts – east west expansion at ground level is difficult. Underground station for high speed rail is made difficult by the underground LRT system and the proposed two level underground BART station.



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Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

San Jose Diridon Station

Functional Lay-Out

WORK DOCUMENT

January 25th, 2007 - v1

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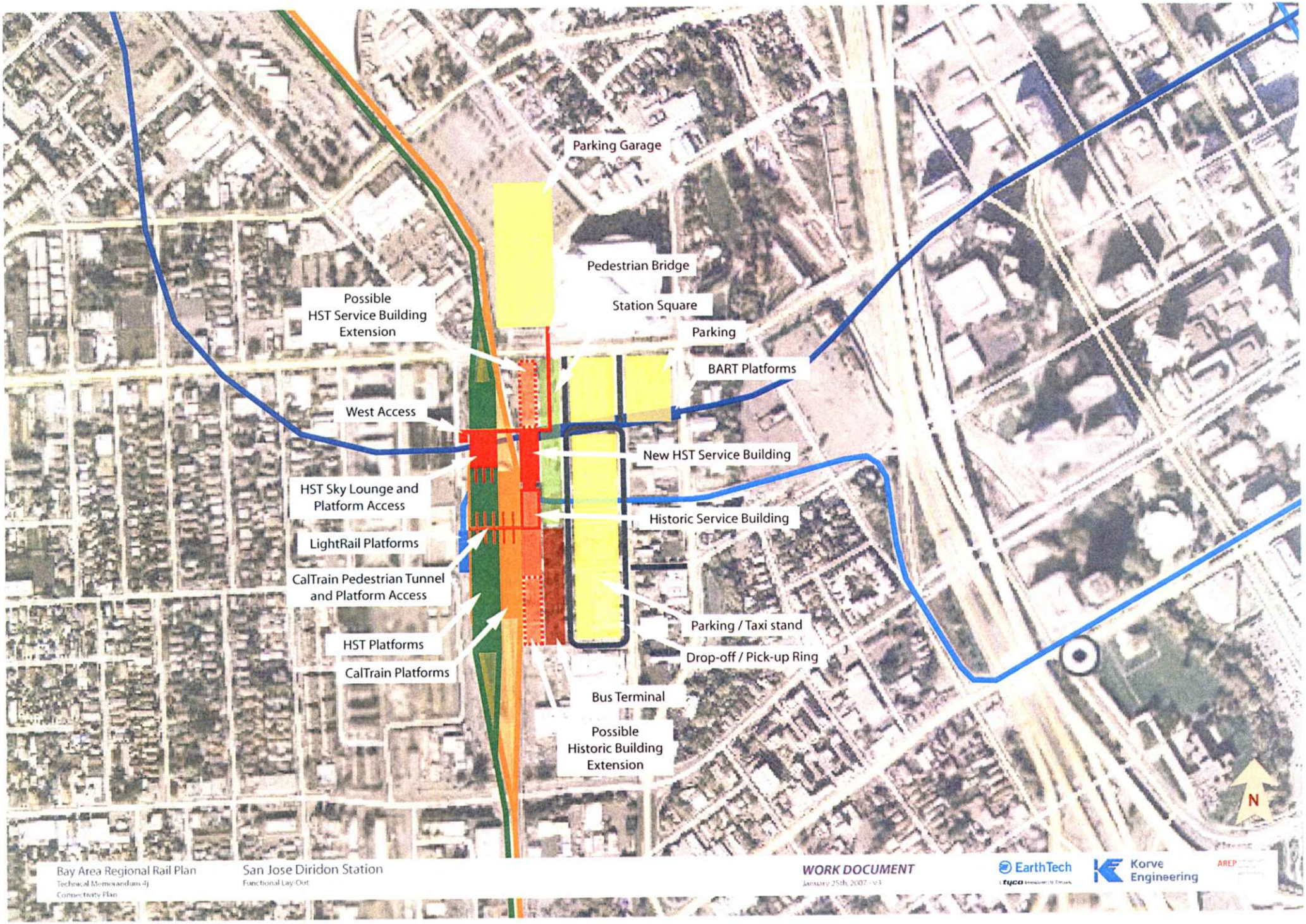
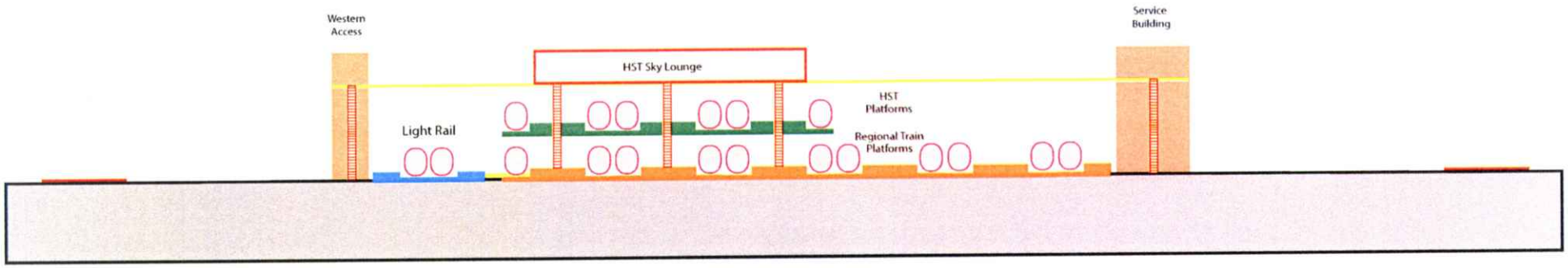
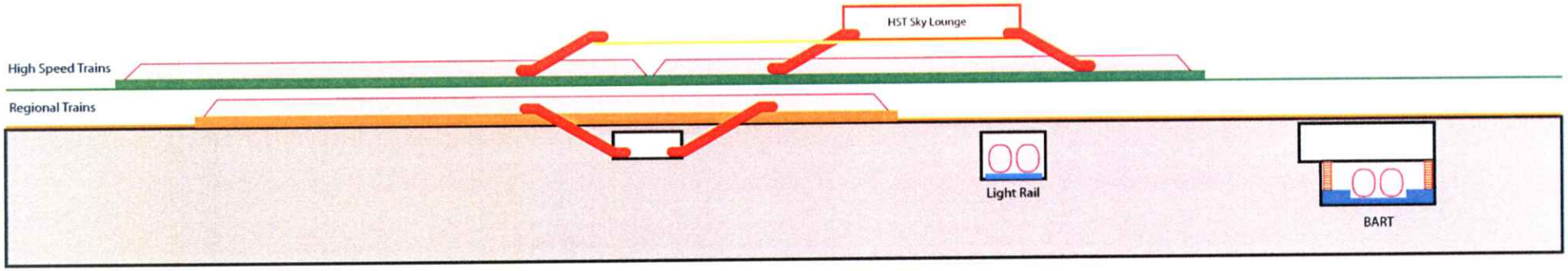
Korve Engineering


Parking Garage
Pedestrian Bridge
Possible
HST Service Building
Extension
Station Square
Parking
BART Platforms
West Access
New HST Service Building
HST Sky Lounge and
Platform Access
Historic Service Building
LightRail Platforms
CalTrain Pedestrian Tunnel
and Platform Access
Parking / Taxi stand
Drop-off / Pick-up Ring
HST Platforms
CalTrain Platforms
Bus Terminal
Possible
Historic Building
Extension
N
Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan
San Jose Diridon Station
Functional Lay-Out
WORK DOCUMENT
January 25th, 2007 - v3
EarthTech
Korve
Engineering
AREP



West East Section



North South Section

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

San Jose Diridon Station Section
Functional Lay-Out

WORK DOCUMENT
January 15th, 2007 - v0

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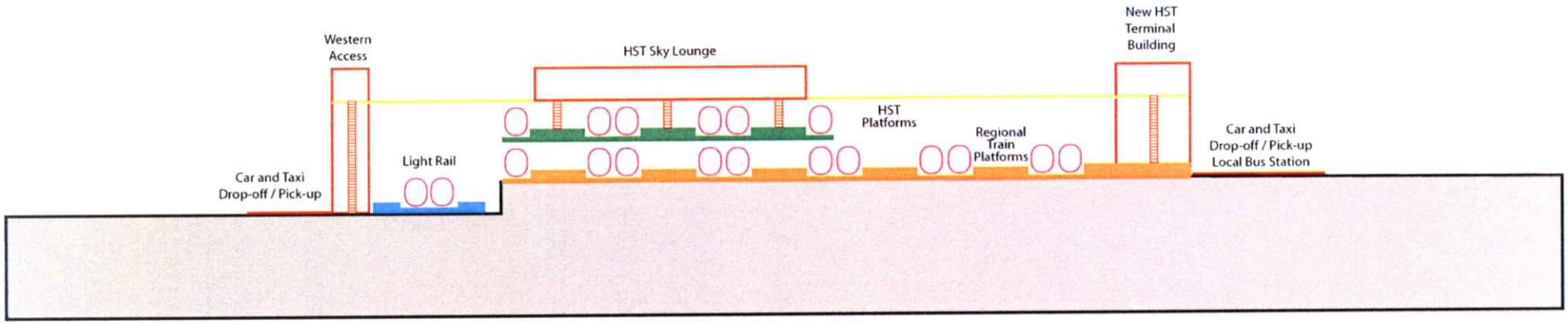
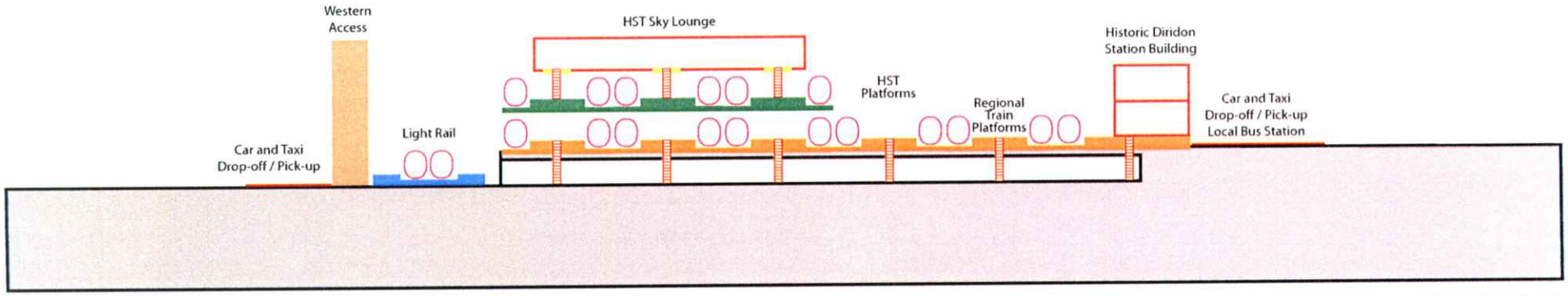
AREP



West East Section 1



West East Section 2

Bay Area Regional Rail Plan
Technical Memorandum 4j
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San Jose Diridon Station
West East Sections
Functional Lay-Out

WORK DOCUMENT
January 22th, 2007 - v2

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Shinn, Fremont

General –This station concept is viable for the Altamont Pass alternative for high speed rail and if the Dumbarton corridor is used for entry to San Francisco. This station concept would not be applicable for the CAHSR Pacheco Pass access route. The site is located in Fremont, Alameda County. Regional road access would be from I-880 to the west and south would be via Fremont Boulevard / Peralta Boulevard and Mowry Avenue / Mission Boulevard from the east and north. The station is located within less than two miles of the existing Centerville Station for Capitol Corridor and ACE. The Hayward Fault runs directly through the middle of this Station Site.

Existing Land Use – The site is surrounded by Alameda Creek to the north, Mission Boulevard to the east, the UPRR to the south and BART to the east. It is bordered by rail lines on all four sides. There are water recharge basins for the Alameda County Water District to the north and east with a historic structure jutting into the basin to the east. It is currently used for industrial facilities. Immediately beyond the surrounding rail lines and the creek the Station area site is generally surrounded by single family residential homes. There are some apartments and commercial facilities near the south east corner of the site.

Station Description – The existing BART line is sitting on an embankment adjacent to the Riverwalk community. Two new side platforms would need to be constructed along side the existing tracks with passenger access from beneath the existing embankment. CAHSR, ACE, Capitol Corridor and Dumbarton tracks and platforms would be at-grade and perpendicular to the BART station. The right-of-way is wide enough for 8 center platforms / 16 tracks (1-ACE / Dumbarton, 1-Capitol Corridor, 6-CAHSR), access road and parking. A garage / terminal building would be located along side the UPRR tracks and the passenger rail platforms. A concourse would be above the platforms connecting them with the Terminal. An additional pedestrian connection would be to the BART station with access to the BART platforms.

Connecting Rail and Passenger Services – CaHSR, BART, Regional Rail (ACE, Dumbarton and possible Capitol Corridor). This presumes Dumbarton does not serve Union City. Capitol Corridor service has been shown to serve this Station via Niles Junction. This means that the Union City Intermodal Station now being planned would not be served by Capitol Corridor. The Fremont Centerville Station is very close, approximately a little over one mile west of this site and would not meet the five mile station spacing criteria for Capitol Corridor service. The existing Centerville station should probably be moved to the west for better track connections. BART would require a new transfer station at this location. The existing Fremont BART station is ~3/4 mile to the south.

CAHSR would enter this site over the Altamont Pass route; grade separated over Niles Junction. High Speed Rail could be extended to the west along the Centerville Line across the Dumbarton Bridge to San Francisco and potentially to San Jose. This would require either land acquisition along the Centreville line, tunneling under a portion of the line for CAHSR. A tunnel portion would be utilized from Shinn Station (after the fault line) to west of Fremont boulevard where it would run at –grade to east of Newark junction; requiring right-of-way acquisition. Newark junction would be grade separated by another tunnel portion. There is insufficient room for freight, passenger rail and CAHSR along the Centerville line. High Speed Rail could also be extended to the south serving San Jose by proceeding down the east bay to San Jose via Warm Springs. The San Jose connection would turn south before Niles Junction and bypass the Shinn station.

Capitol Corridor would continue along the existing alignments and stop adjacent to CAHSR. The proposed Dumbarton service would use the HSR platforms and continue to the West Livermore station for connectivity to the ACE regional rail train service. ACE service would use the proposed high speed rail corridor to San Jose and by-pass the Shinn station.

BART would have a new transfer station and CAHSR passengers would transfer to BART via the pedestrian connection for continuing local service to Oakland and in the future to San Jose.

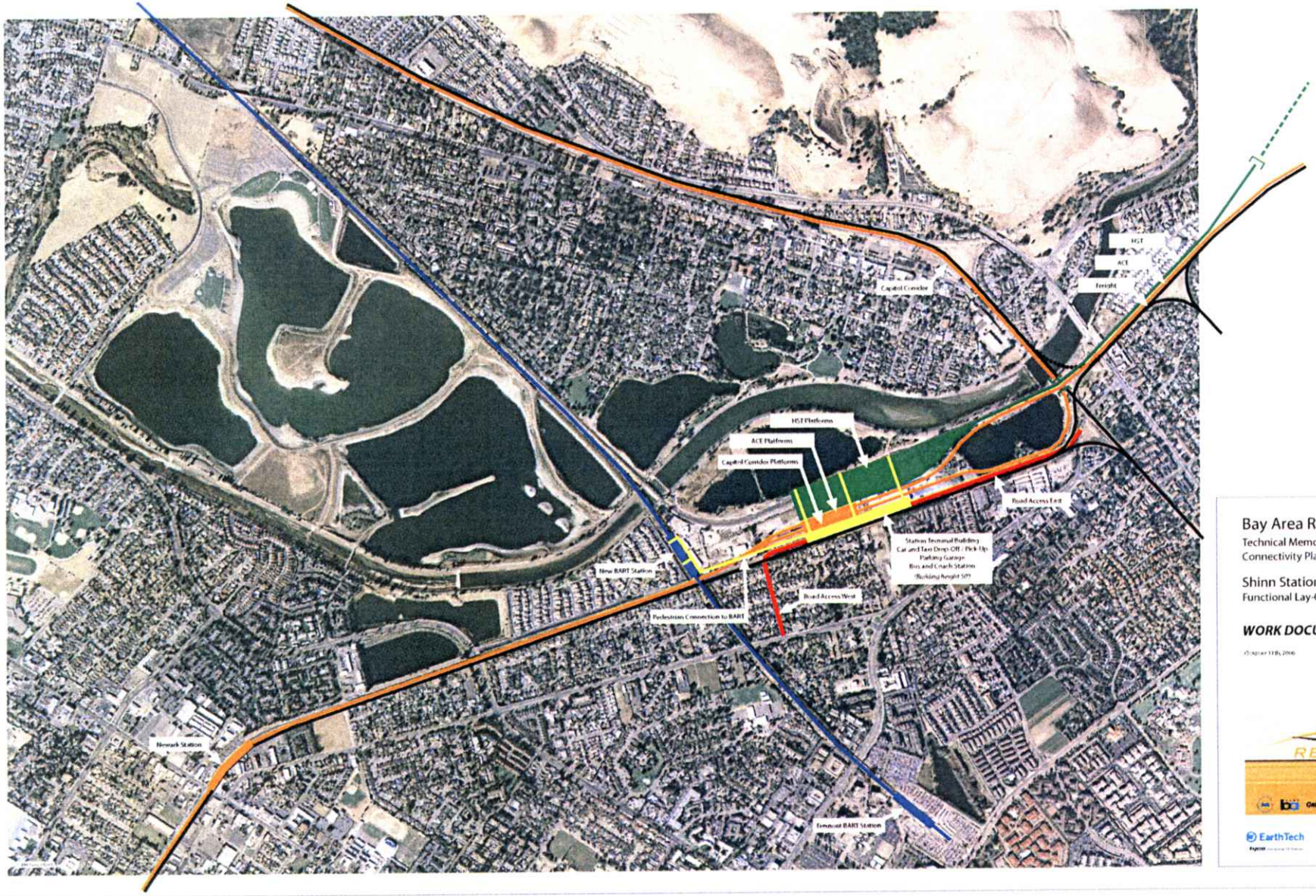
Capitol Corridor service would follow the existing route from Oakland to San Jose, by-passing Union City Intermodal. The service would stop at Shinn to provide continuing service for CAHSR passengers to Oakland and San Jose; Silicon Valley. This would provide a more express service than BART to Oakland.

Existing Freight Railroad services - The UPRR currently owns the right-of-way and trackage surrounding the site on three sides. The tracks to the north are under consideration of being sold to a public agency as part of the Dumbarton / Union City project. Niles Junction is to the east and is heavily used by the UPRR. The tracks on the south side are currently used by the UPRR for the long distance freights to points east in addition to the local freights. Right-of-way allowance for a minimum of two freight tracks must be maintained for the UPRR on the east and south of the site.

Local Access – Vehicular access would be from Shinn Street / Peralta Road and Mowry / Mission Boulevard. This access should be grade separated with the UPRR. Shinn Street at present is the only access to the existing industrial site and also serves as access to the residential area to the south of the Station site.

Transit Oriented Development Opportunities – There are very limited opportunities at this site for TOD. The entire site is taken up by the rail facilities and the site is surrounded by mostly existing single family homes.

Limitations and Other Impacts – Extending the rail alignments towards the peninsula will involve extensive tunneling beneath existing transportation facilities, bridge structures and residential homes.



Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Shinn Station

Functional Lay-Out Phase 1

WORK DOCUMENT

October 11th, 2006

REGIONAL RAIL

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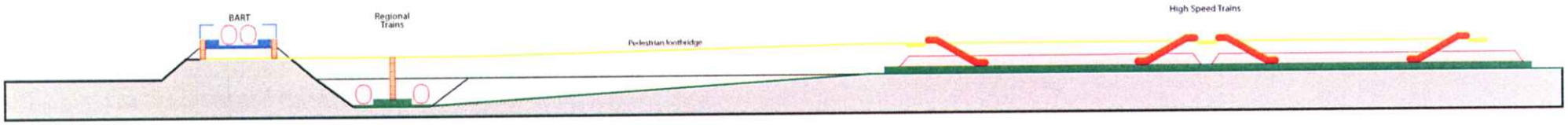
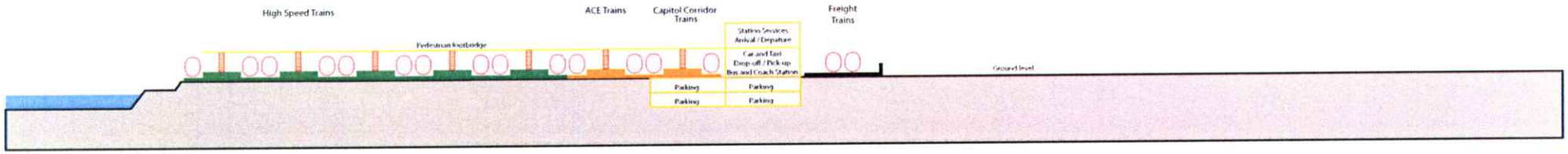


West East Section
Phase 2



North South Section
Phase 1

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Shinn Station
Functional Lay-Out

WORK DOCUMENT
October 11th, 2006

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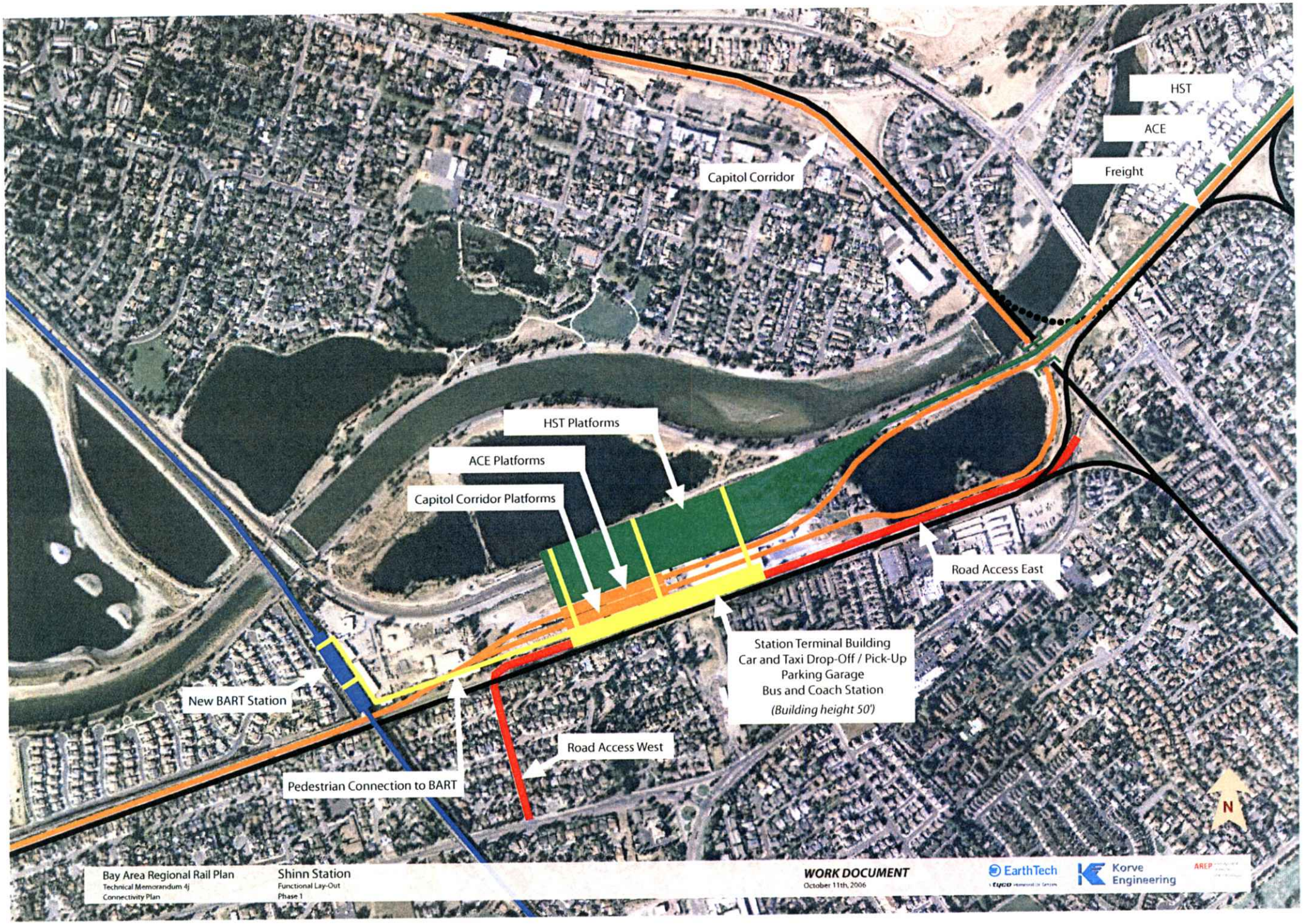
HST
ACE
Freight
Capitol Corridor
HST Platforms
ACE Platforms
Capitol Corridor Platforms
Road Access East
Station Terminal Building
Car and Taxi Drop-Off / Pick-Up
Parking Garage
Bus and Coach Station
(Building height 50')
New BART Station
Road Access West
Pedestrian Connection to BART
N
Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan
Shinn Station
Functional Lay-Out
Phase 1
WORK DOCUMENT
October 11th, 2006
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Stockton

General – The UPRR crosses the BNSF tracks at grade south and east of the Stockton downtown. The existing Stockton Station for ACE is on the UPRR alignment approximately nine blocks north of the crossing and the existing BNSF station is approximately seven blocks to the west of the rail crossing; an awkward connectivity solution. The existing ACE station has recently been renovated and is in excellent condition. The old station on the BNSF line is in generally poor condition.

Existing Land Use – the newly redeveloped commercial district for Stockton is directly to the west of the existing ACE station. There is commercial / industrial along the UPRR and the BNSF corridor in the potential station area. There is residential to the east of the sites and generally surrounding the existing ACE station.

Station Description – The high speed rail station on the Sacramento to Fresno Segment at Stockton is shown adjacent to the existing ACE historic Station building. The HSR station occupies a four block area to the east of the ACE platform. The HSR station is a four track facility to allow for regional rail overlay service. The platforms are at-grade with the local streets fully grade separated. The existing ACE platform in on the west with a minimum of two freight tracks between the ACE platform and the four high speed tracks.

The Station for the Regional Rail Service from Stockton to Pittsburgh (and to Marin for Alternative 2) is shown on the BNSF line crossing the UPRR nine blocks south of the existing ACE historic Station. A new track connection is shown in the northwest quadrant to allow the Pittsburgh train to serve the Stockton Station.

Connecting Rail and Passenger Services – The regional rail services that are envisioned are;

- Service from Sacramento through the Tri-valley to San Jose
- Service from Sacramento along the Highway 99 corridor to Merced and beyond
- Service from Stockton to Pittsburgh and beyond on the BSNF tracks
- High Speed Rail service in the Central Valley from Sacramento to the Bay Area and southern California.

Possible passenger transfer scenarios are from the regional Sacramento service to the BNSF track service to Pittsburgh and beyond and from the HSR service to all the more local regional services.

Existing Freight Railroad services – This is a major crossroads of the UPRR and the BNSF in the Bay Area. The BNSF line carries freight from the Oakland Richmond area to other parts of the US. The UPRR Sacramento subdivision carries both UPRR and BNSF traffic. See existing conditions report for details.

Local Access – Highway 4 crosses the UPRR corridor approximately halfway between the station and track crossing locations. There is easy access to and from the highway to the station site. The street pattern surrounding the site is on a regular grid with good local street access.

Transit Oriented Development Opportunities – downtown Stockton is presently being redeveloped with modern commercial and the stations should encourage further redevelopment towards the station complex. Major redevelopment is being planned to the west of the Station site.

Limitations and Other Impacts – The track connection at the BNSF/UPRR crossing will require new right-of-way.

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Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Stockton Station

Functional Lay-Out

WORK DOCUMENT

December 21th, 2006 - v2

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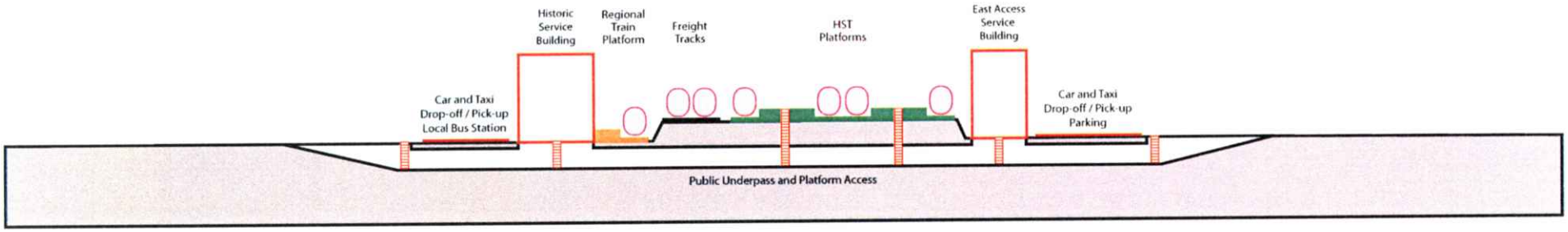

West East Section

Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Stockton Station Section
Functional Lay-Out

WORK DOCUMENT
January 29th, 2007 - v1

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AREP

Tracy

General – This Station location is located in downtown Tracy directly adjacent to the recent redevelopment area for the downtown. There is a generous amount of vacant land that could be purchased and used for TOD. It is located at the crossing of the UPRR Mococo line and the Tracy to Lathrup UPRR line with the extension to the Altamont Pass over the old SP route. The high speed rail alignment from the central valley will use the Tracy / Lathrop line and continue over the old SP line over the Altamont Pass. A regional rail overlay service will use this same alignment with the HSR service. There are two alternatives services; standard and light weight for the Mococo line. This service will come from Pittsburgh or potentially beyond, Byron to Tracy and continue south towards Patterson.

Existing Land Use – Residential areas are to the west, south and north with agricultural and industrial to the east. The downtown commercial district is also to the north.

Station Description – The Station is an aerial platform configuration with a concourse below. Station services are accessed from the existing street level. Passengers will walk into the station concourse at grade and reach the platforms via stairs, escalators and elevators. East of the Station the Mococo line service will need to pass below the high speed rail service to continue south to Patterson. The Mococo service will remain in the same configuration regardless of the type of equipment. The high Speed rail service is designed as a four track system to allow for regional stops and to potentially allow the high speed trains as non-stops.

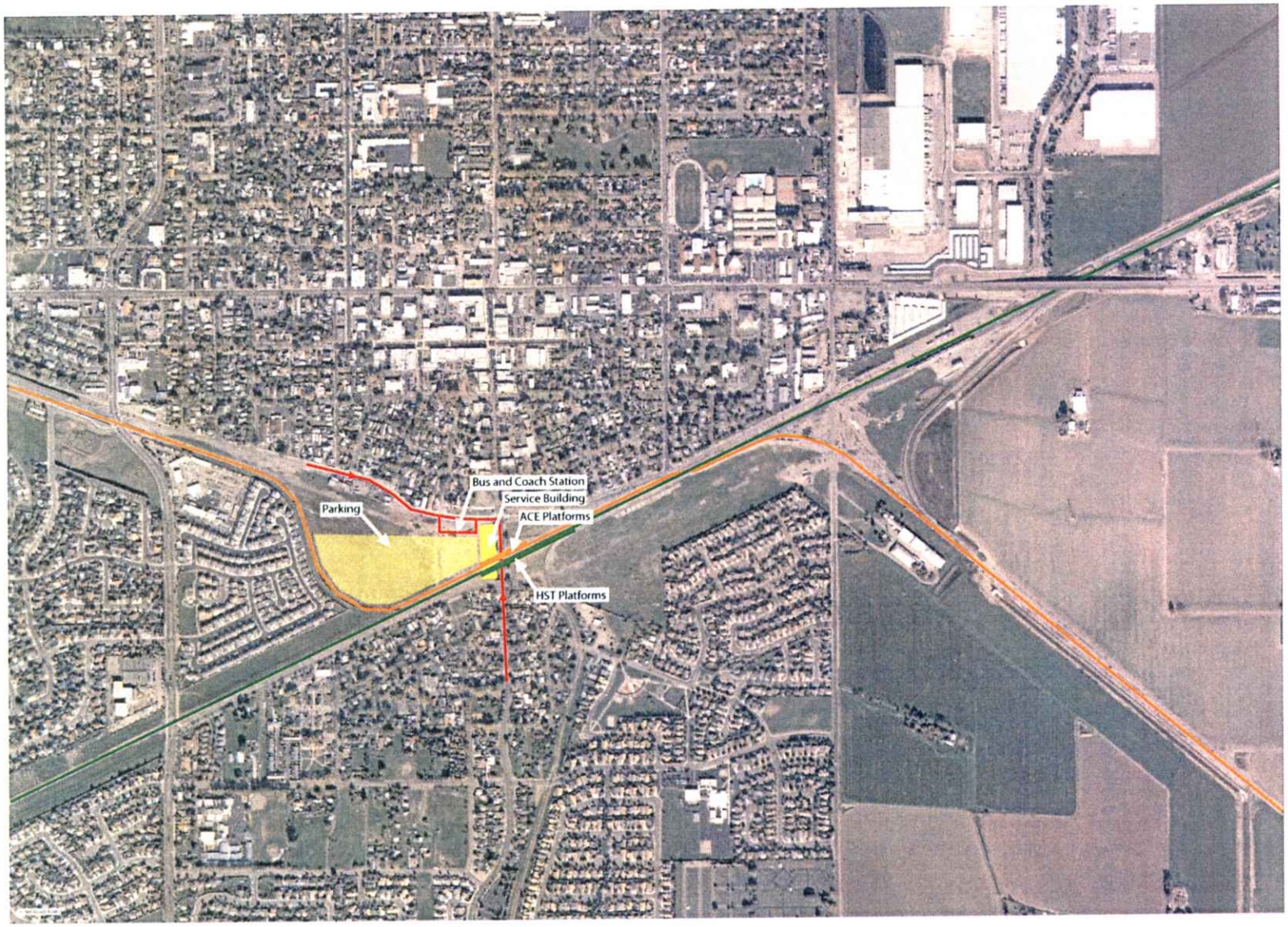
Connecting Rail and Passenger Services – The high speed rail system Tracy Station could be a major origination point for passengers from the bedroom communities in the Bay Area wanting to go to destinations in Southern California. The regional rail overlay services from the surrounding areas in the Tri-valley and the Manteca area could supply connecting passengers along with the passengers coming from the Mococo line; north and south.

Existing Freight Railroad services – The Mococo line is under consideration of being sold to a public agency for passenger service. There is major UPRR activity to the east on the Tracy to Lathrup line. Discussions need to take place to confirm whether freight traffic will need to pass through the Station Area to industries to the west of Tracy.

Local Access – The major local streets are Tracy Boulevard and Eleventh Street; both of these connect to I-205. Central Avenue and Holly lead directly to the center of the Station complex.

Transit Oriented Development Opportunities – This station has a high physical potential for TOD. Although a no growth philosophy is present.

Limitations and Other Impacts – There appear to be few physical limitations for this Station site.



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Bay Area Regional Rail Plan

Technical Memorandum 4j
Connectivity Plan

Tracy Station

Functional Lay-Out

WORK DOCUMENT

October 11th, 2006

REGIONAL RAIL

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Bay Area Regional Rail Plan
Technical Memorandum 4j
Connectivity Plan

Tracy Station
Functional Lay-Out

WORK DOCUMENT
December 5th, 2006 - v2

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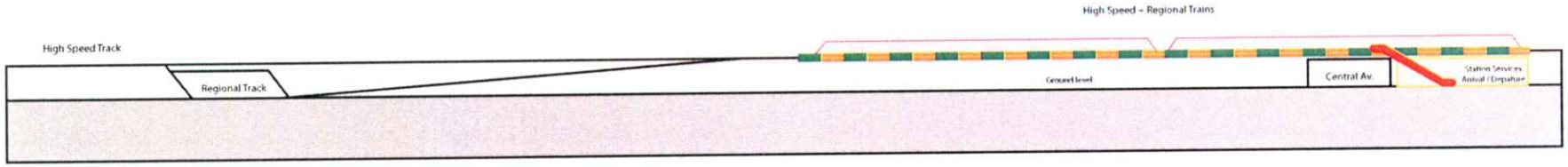

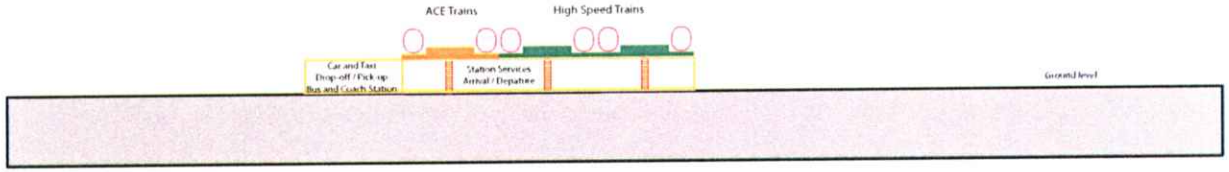

North South Section

Union City

General – The existing BART station site is currently under redevelopment for significant Transit Oriented Development. The sites to the east of the BART station have been environmentally cleared and are currently being redeveloped for residential and commercial. Two sites have been looked at for high speed rail station location; (1) directly adjacent to the BART station as part of the regional rail system or (2) approximately 800' to the west on the UPRR Niles subdivision. The geometric alignments for the tracks near Niles Junction are significantly faster for site 2 than for site 1.

Existing Land Use – Presently under redevelopment

Station Description – The high speed rail station for site 2 is located on the Niles subdivision of the UPRR in an at-grade configuration with a concourse below. It would be a four track station with two platform tracks and two express tracks. The planned Intermodal Station near the BART station is a four track, two center platform Station with a common concourse with BART below the tracks.

Connecting Rail and Passenger Services – The planned Union City Intermodal Station would serve BART, Capitol Corridor Service, Dumbarton Rail and potentially HSR. With HSR at the BART Union City Intermodal station the capitol Corridor Service would be replaced with a light weight equipment service from Oakland to San Jose. The passengers from the HSR Station on the Niles sub would need to walk the approximately 800' to the Intermodal Station. The HSR station would serve the long distance passenger and a more regional service from Oakland to San Jose.

Existing Freight Railroad services – There is currently existing freight traffic from Oakland to the Milpitas area and beyond on the Niles Subdivision. The potential exists to significantly increase freight traffic by relocating the Coast traffic to this Niles subdivision. The Oakland sub has very little existing traffic and with the implementation of the Union City Intermodal this traffic could be relocated.

Local Access – Decoto Road and the future highway 84 would be the major north /south routes with Mission Boulevard and Alvarado Niles the major east /west routes.

Transit Oriented Development Opportunities – This site has major redevelopment occurring at present.

Limitations and Other Impacts – none

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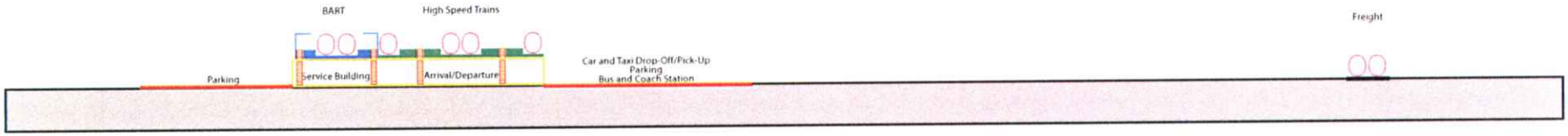


West East Section

Warm Springs, Fremont

General – This is a future BART station site in the city of Fremont. The site is directly adjacent to the Warm Springs subdivision of the UPRR and is fairly restricted in width.

Existing Land Use – Mostly industrial and commercial

Station Description – The Station would be in an aerial configuration over the BART tracks with a common concourse for the two services. HSR would be in an aerial configuration.

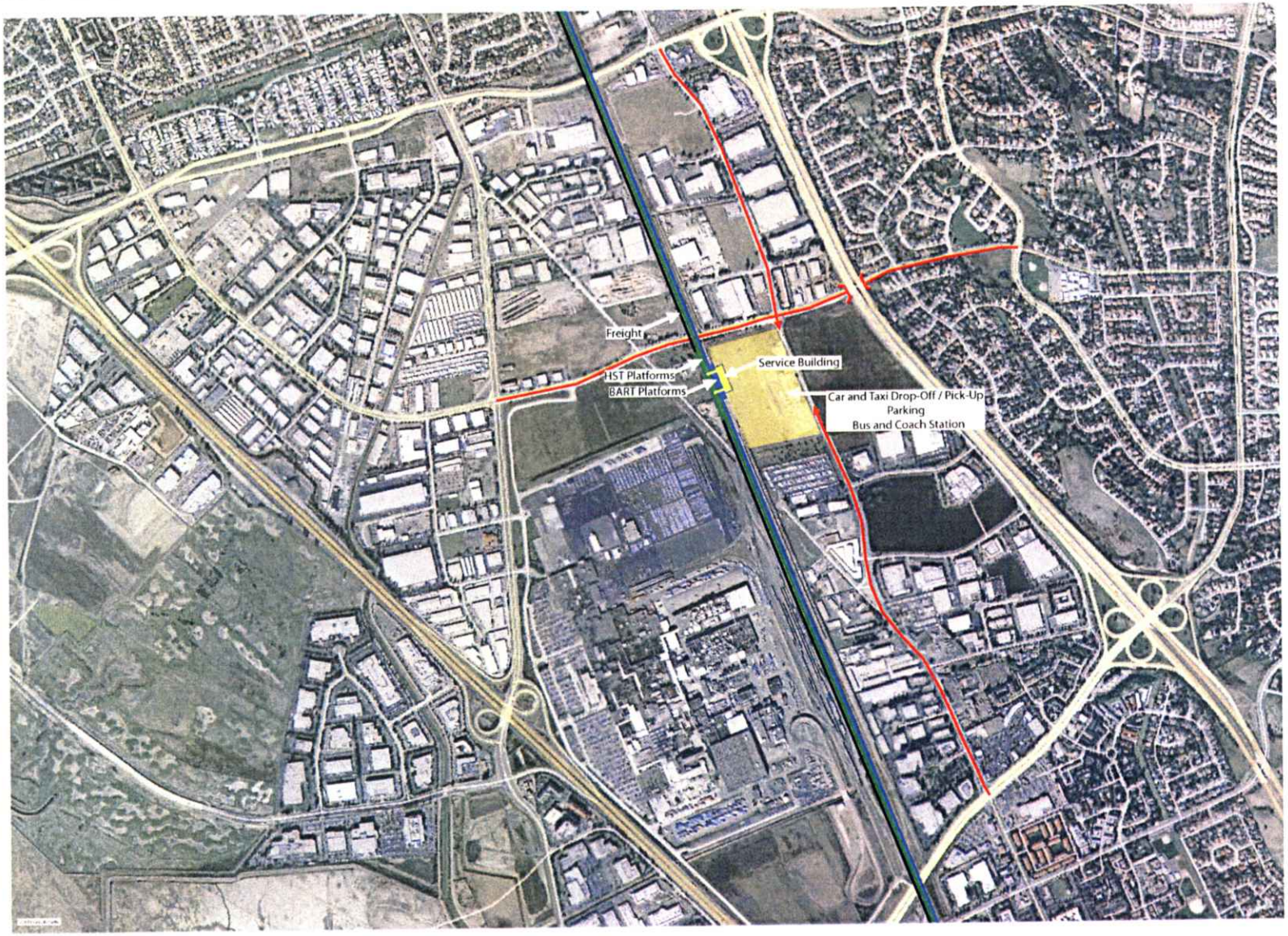
Connecting Rail and Passenger Services – The HSR station would serve the long distance passenger and a more regional service from Oakland to San Jose and the BART system would provide the transfer to more local destinations in San Jose not served by the high speed rail system.

Existing Freight Railroad services – There is heavy local freight traffic to the local NUMMI factory with some through freight directly to the west of this site.

Local Access – Warm Springs Boulevard would provide access to I-680 and I-880 via Mission Boulevard and Auto Mall Parkway. Grimmer Boulevard would provide east/ west access to the residential areas to the east.

Transit Oriented Development Opportunities – TOD at this location is limited

Limitations and Other Impacts – Limited development opportunities



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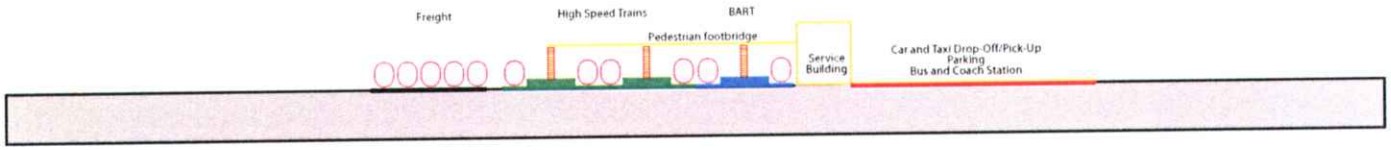
West East Section
Phase 2



West Oakland

General – The West Oakland Station would be a major connectivity, destination and terminus / transfer point in the Bay Area. It has the potential to serve San Francisco and Oakland as part of the High Speed Rail System regardless of whether the high speed rail system comes up the peninsula or the east bay. It also has the potential to become a major connectivity point for an enhanced regional rail system without high speed rail. See Figure WO-1 for an overview of the potential system for San Francisco and Oakland.

The site is located adjacent to the existing BART station. The intersection of Mandela Parkway and 7th Street would be at the center of the Station Complex. The site should be looked at as three potential operating scenarios that have the potential of being phased as individual stand alone projects.

1. High Speed Rail entering San Francisco via the peninsula, terminating in Oakland with a regional rail overlay service and a BART connection.
2. High Speed Rail entering San Francisco via the East Bay and the West Oakland Station, terminating in San Francisco or at SFO with a regional rail overlay service and a BART connection.
3. Regional Rail service only, with no HSR service but with a BART connection.

The West Oakland Station could be operated as a terminus station should the High Speed Rail System enter the Bay Area via the Peninsula, stopping in San Francisco before stopping at the West Oakland Station and terminating at a yard adjacent to I-880. Should High Speed Rail come to San Francisco from the east bay then the West Oakland Station would operate as a through station. The yard along I-880 would still be accessible but would require a deadhead move from San Francisco or high speed rail should continue to SFO.

Access from San Francisco would be via a new tube across the Bay in conjunction (or separately) with BART. If a new tube is required for either service, than a four track tube across the bay should be seriously considered. The new tube would have to be below the 50' deep Inner Harbor channel leading to the Port of Oakland.

Existing Land Use – The site is surrounded by residential, commercial and some industrial. The United States Post Office occupies a major site directly adjacent to the west of the Station complex. The area to the north and south is mainly occupied by residential structures. There are commercial and some light industrial facilities surrounding the site. New multistory residential buildings have been recently constructed to the east across the street from the existing BART station. The highway and major railroad facilities are to the west.

Station Description – The station site is anchored by the existing West Oakland BART station adjacent to 7th Street and Mandela Parkway. For the full build-out of this connectivity point the following general arrangement would be needed.

- The existing BART station would remain in its present location and configuration as an aerial structure station with the concourse at grade level.
- The concourse for High Speed Rail would be two levels below grade with a four track configuration above and below the concourse level. The track and platform levels would be generally parallel to BART directly under 7th Street. The concourse would be directly connected to the BART concourse above. These HSR track levels would only be needed when high speed rail enters San Francisco from the east bay. The most conservative buildout for the HSR tracks and platform has been shown to meet all eventualities; a terminus station. A through station would most likely require less tracks and platforms.
- The regional rail system would be at the lowest level, passing below the high speed rail level at a perpendicular angle directly below Mandela Parkway. There would be a

concourse above the track level that is connected to the high speed rail level concourse above. Under the scenario where high speed rail comes in from the peninsula and terminates in West Oakland this level would also be used by high speed rail in addition to the regional rail system.

- A station for a diesel operated regional rail system has been shown on the west end of this complex connected to the other services via an underground connection along the Regional Rail platform or at ground level (very difficult with the existing rail facilities). A walkway one level down would most likely be more practical.

See attached Bay Crossing graphics for alignment options and general station locations.

Connecting Rail and Passenger Services – This connectivity station point would serve BART (all lines), CAHSR, and regional rail (extension of Caltrain service and/or Capitol Corridor Service). Passenger transfers would function as follows for each of the three operating scenarios.

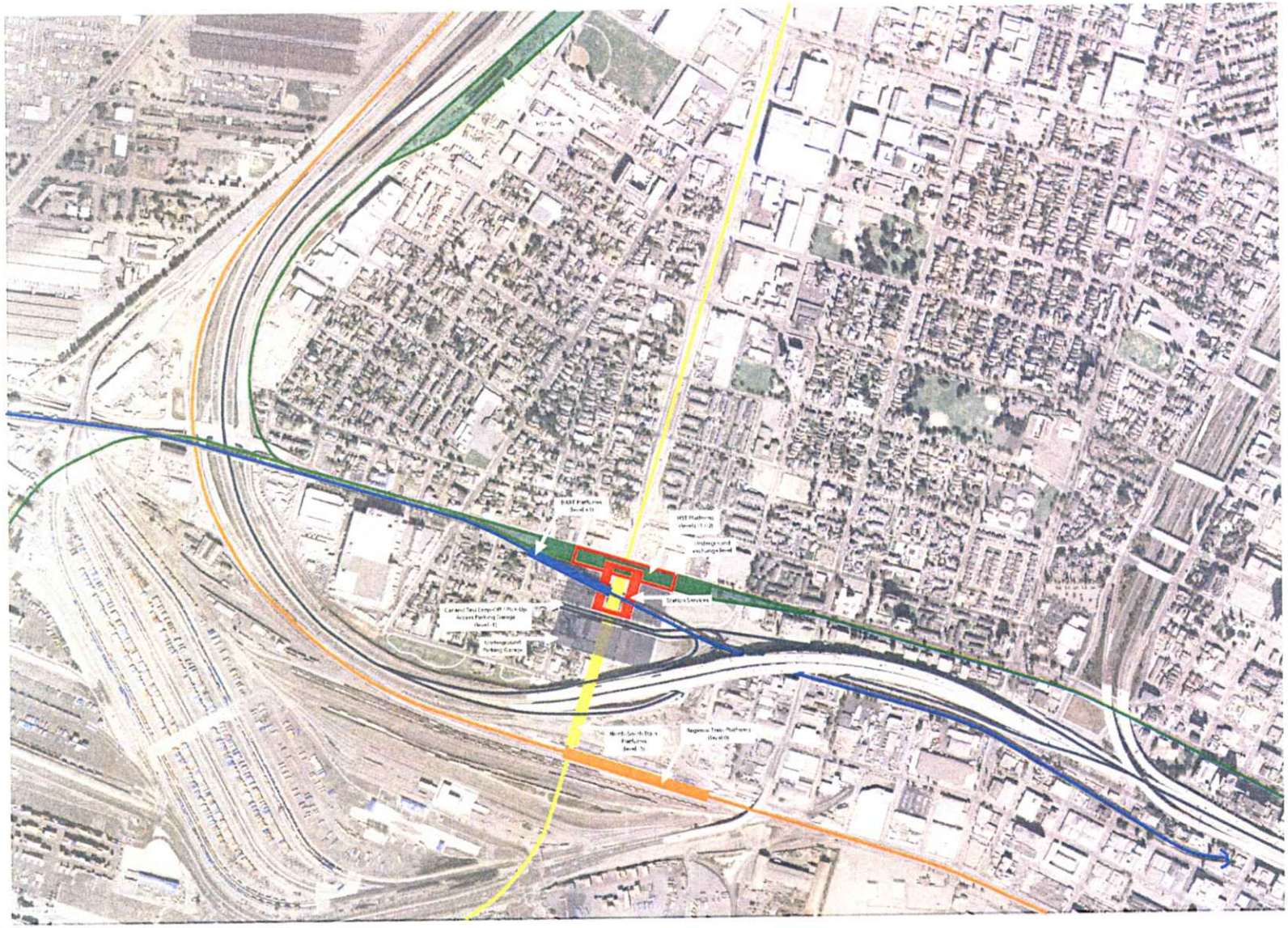
1. High Speed Rail entering San Francisco via the peninsula, terminating in Oakland with a regional rail overlay service. BART would be above grade as existing, with all lines stopping at this location providing connectivity to all points on the BART system. High speed rail along with regional rail would be in a four track, two center platform deep tunnel configuration beneath Mandela Parkway. High Speed rail would be the "express system" along the peninsula to this point; West Oakland, while regional rail is the "local" continuing to Sacramento. Passengers from high speed rail continuing north along the Capitol Corridor route would cross platform transfer to the regional rail system for their trip. Passengers from high speed rail or regional rail wanting to reach a destination in the East Bay would transfer to BART above. In reverse East Bay patrons wanting to reach the high speed rail system or regional rail system to the peninsula would transfer here from BART. High speed rail would enter the yard from the northern end of Mandela Parkway.
2. High Speed Rail entering San Francisco via the East Bay and the West Oakland Station, terminating in San Francisco or at SFO with a regional rail overlay service. BART again would be above grade as existing, with all lines stopping at this location providing connectivity to all points on the BART system. High speed rail would be in a four track, two center platform deep tunnel configuration beneath 7th Street. The high speed rail system would continue to the west to connect to the yard and to the transbay tunnel to San Francisco. Regional rail would be below the high speed rail in a deep tunnel under Mandela Parkway and continuing in the Capitol Corridor route to Sacramento. High Speed rail passengers would transfer to BART for local distribution in both the East Bay and the portion of San Francisco not served by high speed rail. These passengers would need to use the vertical circulation from the high speed rail platforms below grade to the BART platforms above grade. Regional Rail would be in a two track deep tunnel beneath Mandela Parkway. Regional rail passengers would transfer to either high speed rail for long distance travel or BART for local distribution. Connectivity within the Station would be via vertical circulation to the other rail services.
3. Regional Rail service only, with no HSR service. The regional rail tracks and platform would be in the same configuration as described above in scenario 2. Regional rail would provide regional service from Sacramento to San Jose and beyond. The West Oakland BART connection would provide local distribution to and from the East Bay and points in San Francisco not served by the regional rail system. Passenger transfer would be via the vertical circulation elements from the deep regional rail platform to the above ground BART station. If no transbay tube is constructed and the Capitol Corridor Service remains as a diesel, standard service, then a connectivity station could be constructed adjacent to the existing UPRR tracks with an underground connector to BART. This connector would be along the corridor shown for the Regional Rail Station concourse leading to Sacramento.

Existing Freight Railroad services - The UPRR currently operates on the tracks to the south and west of this site and I-880. The UPRR would not operate through this site. A major Intermodal Freight Terminal is located to the south and west of the site.

Local Access – Local vehicular access would be from 7th Street and Mandela Parkway. Access from I-880 would be from 7th Street and Union Street. Access from I-980 would be from the 12th Street exit and local streets; either Brush to 7th Street or 14th Street to Mandela Parkway. See figure WO-2.

Transit Oriented Development Opportunities – There is some new development taking place across the Street from the existing BART station. The existing neighborhood between I-880 and 7th Street is mostly residential with some commercial / light industrial. It appears that the residents of the area fall into the lower to middle economic income bracket. A connectivity station of this magnitude will attract redevelopment whether purely private or with government support. It has the opportunity to raise the surrounding property values to support redevelopment. The ROW required for the Station is shown on the figures 2 and 3; essentially a four block area directly to the south of the Station Complex. The existing BART surface parking would be retained in its entirety.

Limitations and Other Impacts – Major redevelopment would impact the existing residential neighborhood.



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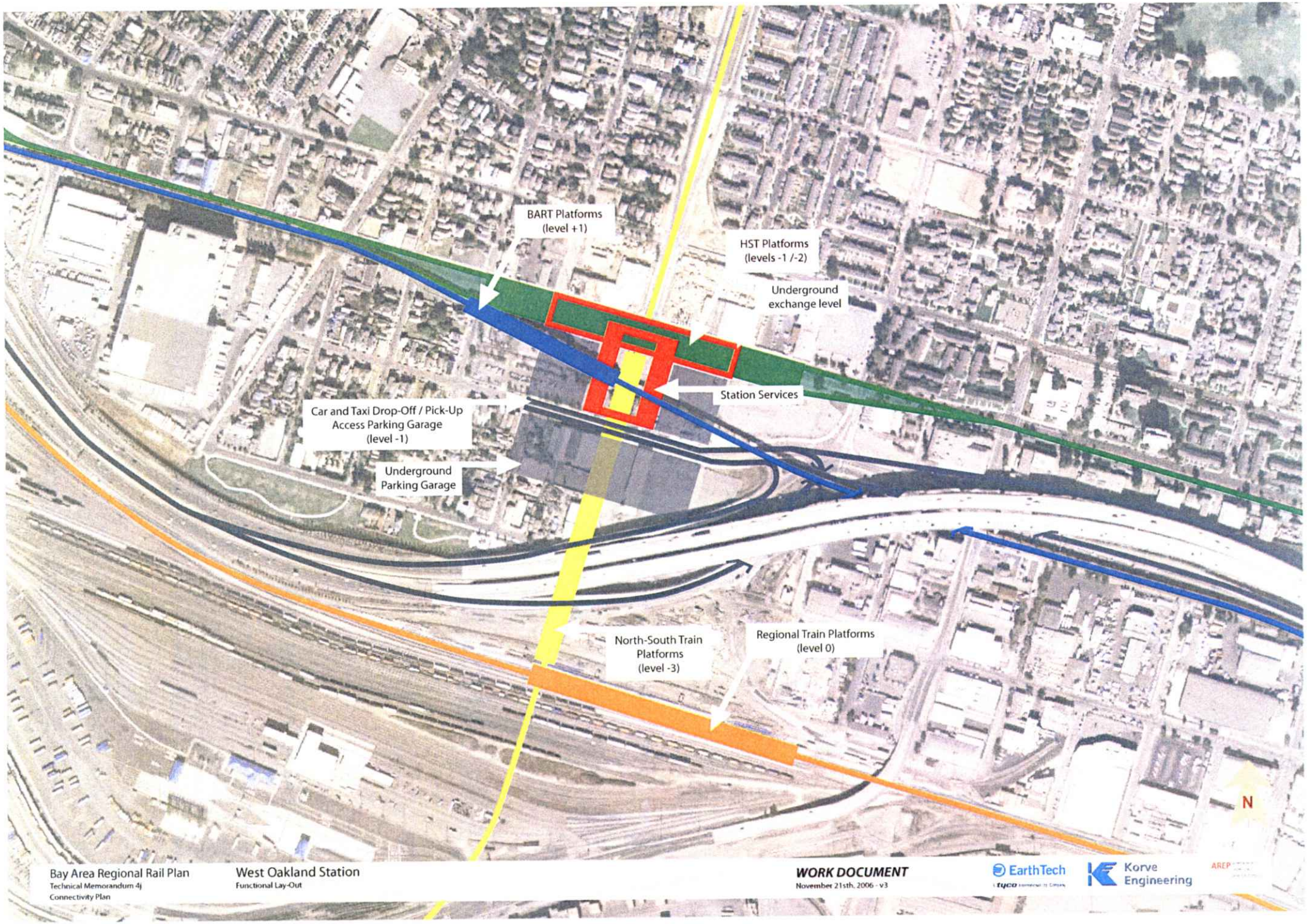

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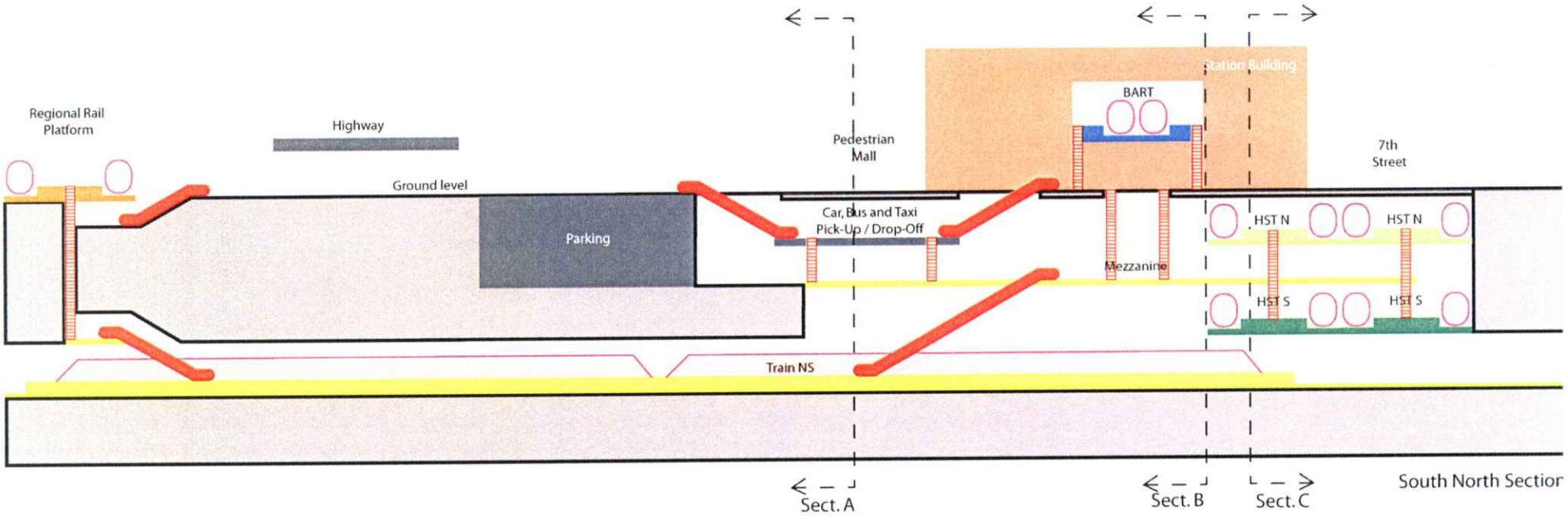

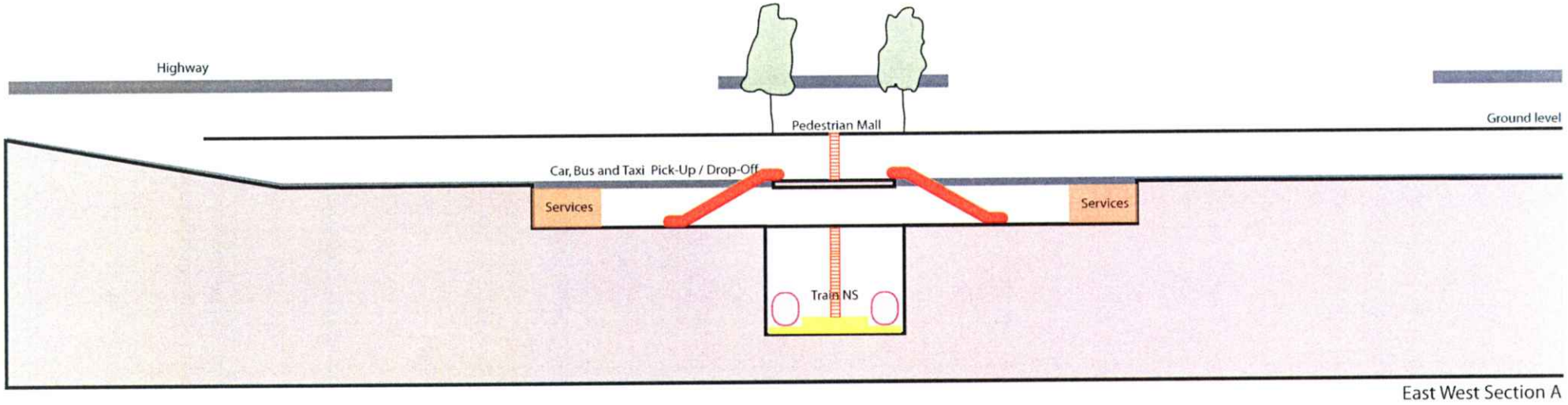

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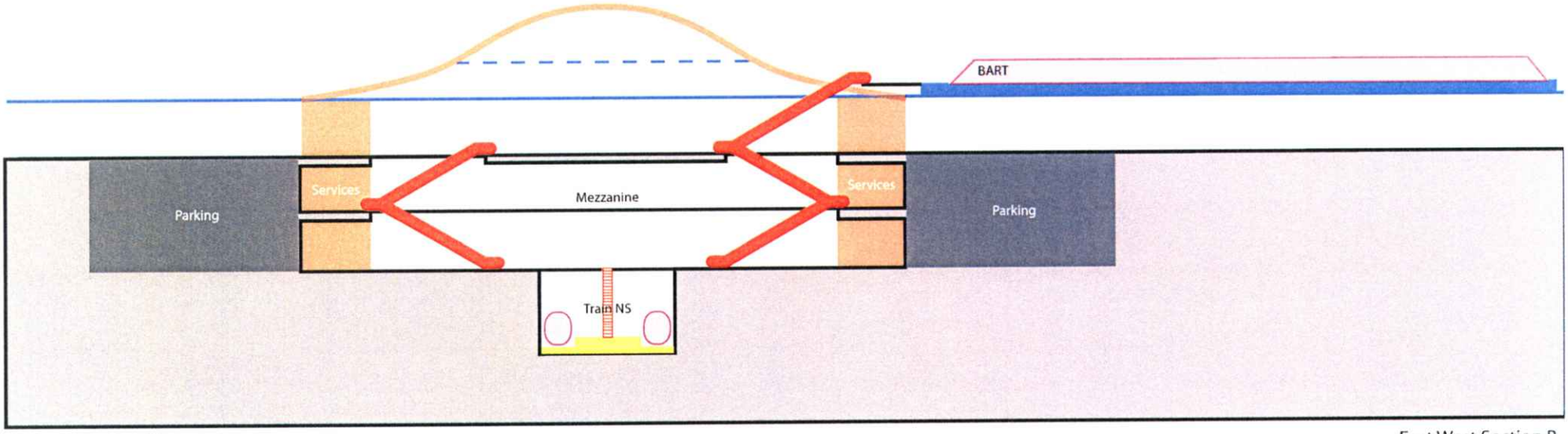
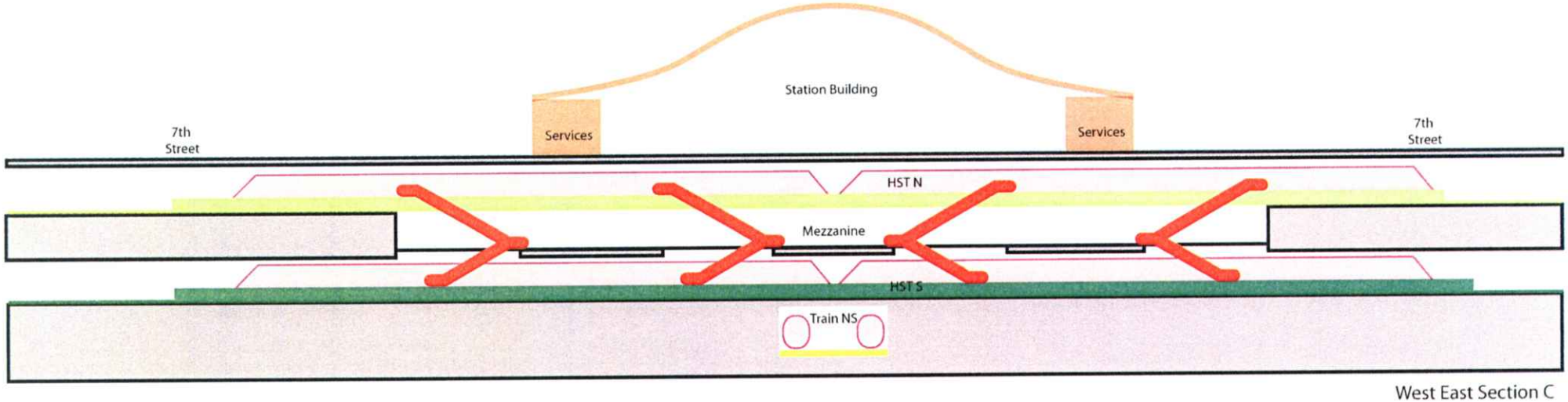


East West Section B



West East Section C